

CELL / MODEL NAME	DESCRIPTION	DATE
OSC-A-1	General plan and elevation, aluminum truss and steel post	7/1/2006
OSC-A-2	Truss details, aluminum truss and steel post	7/1/2006
OSC-A-D	Damping Device	7/1/2006
OSC-A-3	Juncture details, aluminum truss and steel post	7/1/2006
OSC-A-4	Type I-C-A truss support, aluminum truss and steel post	7/1/2006
OSC-A-5	Type II-C-A & III-C-A truss support, aluminum truss and steel post	7/1/2006
OSC-A-6	Aluminum walkway details, aluminum truss and steel post	7/1/2006
OSC-A-6S	Alternate steel walkway details, aluminum truss and steel post	7/1/2006
OSC-A-7	Walkway details, aluminum truss and steel post	7/1/2006
OSC-A-7S	Alternate steel walkway details	7/1/2006
OSC-A-8	Handrail details, aluminum truss and steel post	7/1/2006
OSC-A-9	Drilled shaft foundations details	7/1/2006

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
-	-	-	-	-
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT -	

SHEET NO. -

- SHEETS

Contract #

GENERAL NOTES

DESIGN: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals. ("AASHTO Specifications")

CONSTRUCTION: Current (at time of letting) Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, Supplemental Specifications and Special Provisions. ("Standard Specifications")

LOADING: 90 M.P.H. WIND VELOCITY

WALKWAY LOADING: Dead load plus 500 lbs. concentrated live load.

DESIGN STRESSES:
Field Units
 $f_c = 3,500$ p.s.i.
 $f_y = 60,000$ p.s.i. (reinforcement)

WELDING: All welds to be continuous unless otherwise shown. All welding to be done in accordance with current AWS D1.1 and D1.2 Structural Welding Codes (Steel and Aluminum) and the Standard Specifications.

MATERIALS: Aluminum Alloys as shown throughout plans. All Structural Steel Pipe shall be ASTM A53 Grade B with a minimum yield of 35,000 p.s.i., or A500 Grade B or C with a minimum yield of 46,000 p.s.i. If A500 pipe is substituted for A53, then the outside diameter shall be as detailed and wall thickness greater than or equal to A53.

All Structural Steel Plates and Shapes shall conform to AASHTO M270 Gr. 36, Gr. 50 or Gr. 50W*. Stainless steel for shims, sleeves and handhole covers shall be ASTM A240, Type 302 or 304, or another alloy suitable for exterior exposure and acceptable to the Engineer. The steel pipe and stiffening ribs at the base plate for the column shall have a minimum longitudinal Charpy V-Notch (CVN) energy of 15 lb.-ft. at 40° F. (Zone 2) before galvanizing.

FASTENERS FOR ALUMINUM TRUSSES: All bolts noted as "high strength" must satisfy the requirements of AASHTO M164 (ASTM A325), or approved alternate, and must have matching lock nuts. Threaded studs for splices (if Members interfere) must satisfy the requirements of ASTM A449, ASTM A193, Grade B7, or approved alternate, and must have matching lock nuts. Bolts and lock nuts not required to be high strength must satisfy the requirements of ASTM A307. All bolts and lock nuts must be hot dip galvanized per AASHTO M232. The lock nuts must have nylon or steel inserts. A stainless steel flat washer conforming to ASTM A240 Type 302 or 304, is required under both head and nut or under both nuts where threaded studs are used. High strength bolt installation shall conform to Article 505.04 (f) (2)d of the IDOT Standard Specifications for Road and Bridge Construction. Rotational capacity ("ROCAP") testing of bolts will not be required.

U-BOLTS AND EYEBOLTS: U-Bolts and Eyebolts must be produced from ASTM A276 Type 304, 304L, 316 or 316L, Condition A, cold finished stainless steel, or an equivalent material acceptable to the Engineer. All nuts for U-Bolts and Eyebolts must be lock nuts equivalent to ASTM A307 with nylon or steel inserts and hot dip galvanized per AASHTO M232. A stainless steel flat washer conforming to ASTM A240, Type 302 or 304, is required under each U-Bolt and Eyebolt lock nut.

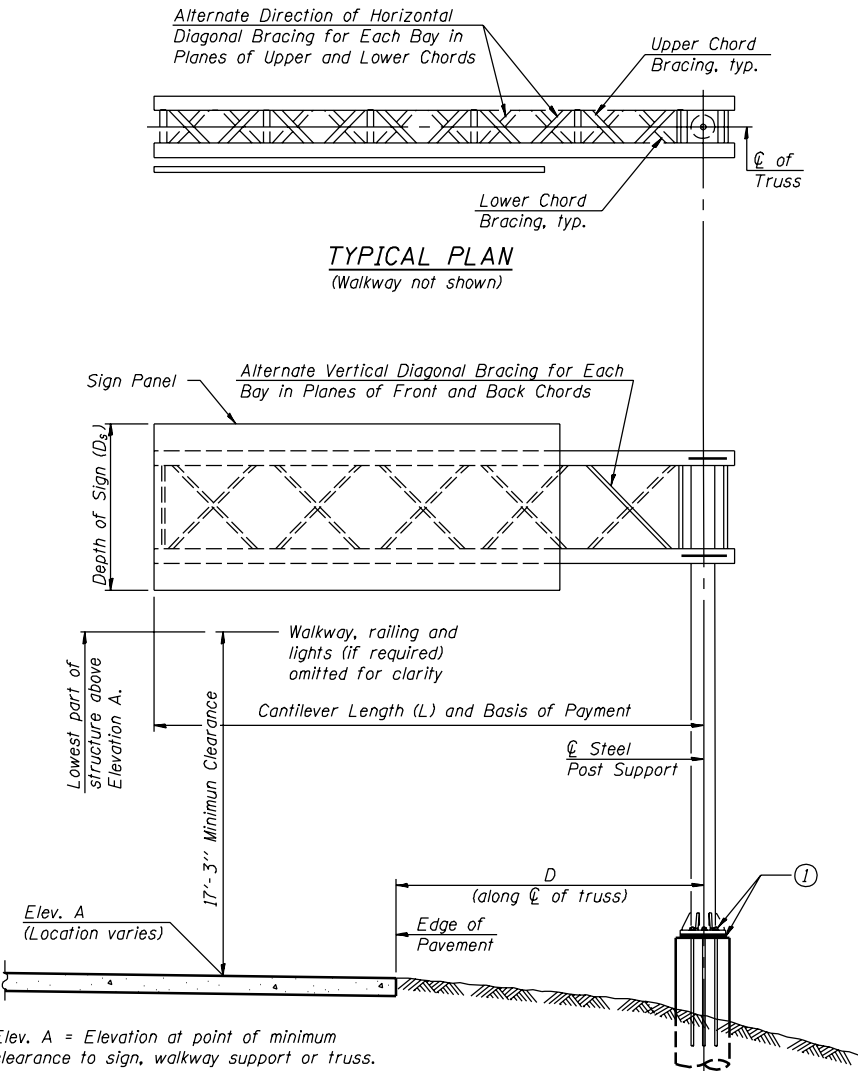
GALVANIZING: All Steel Grating, Plates, Shapes and Pipe shall be Hot Dip Galvanized after fabrication in accordance with AASHTO M111. Painting is not permitted.

ANCHOR RODS: Shall conform to AASHTO M314 Gr. 55 with a minimum Charpy V-Notch (CVN) energy of 15 lb.-ft. at 10° F.

CONCRETE SURFACES: All concrete surfaces above an elevation 6" below the lowest final ground line at each foundation shall be cleaned and coated with Bridge Seat Sealer in accordance with the Standard Specifications.

REINFORCEMENT BARS: Reinforcement Bars designated (E) shall be epoxy coated in accordance with the Standard Specifications.

**CANTILEVER SIGN STRUCTURES
GENERAL PLAN & ELEVATION
ALUMINUM TRUSS & STEEL POST**



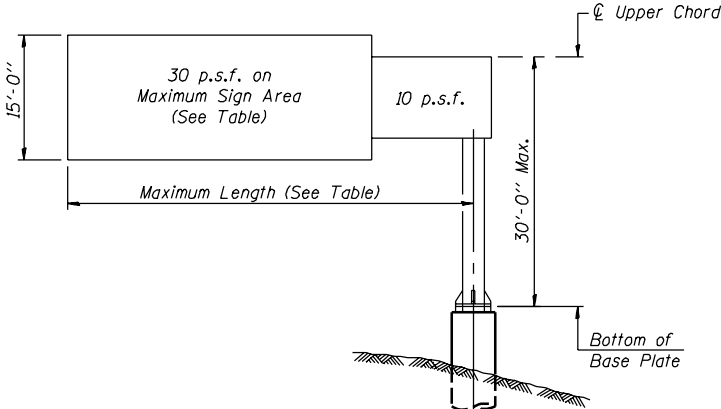
Elev. A = Elevation at point of minimum clearance to sign, walkway support or truss.

TYPICAL ELEVATION
Looking in Direction of Traffic

Sign support structures may be subject to damaging vibrations and oscillations when sign panels are not in place during erection or maintenance of the structure. To avoid these vibrations and oscillations, consideration should be given to attaching temporary blank sign panels to the structure.

Structure Number	Station	Design Truss Type	Cantilever Length (L)	Elev. A	Dim. D	D _s	Total Sign Area

Truss Type	Maximum Sign Area	Maximum Length
I-C-A	170 Sq. Ft.	25 Ft.
II-C-A	340 Sq. Ft.	30 Ft.
III-C-A	400 Sq. Ft.	40 Ft.



DESIGN WIND LOADING DIAGRAM

Parameters shown are basis for I.D.O.T. Standards
Installations not within dimensional limits shown
require special analysis for all components.

- ① After adjustments to level truss and insure adequate vertical clearance, all top and leveling nuts shall be tightened against the base plate with a minimum torque of 200 lb.-ft. Stainless steel mesh shall then be placed around the perimeter of the base plate. Secure to base plate with stainless steel banding.

Note:
Trusses shall be shipped individually with adequate provision to prevent detrimental motion during transport. This may require ropes between horizontals and diagonals or energy dissipating (elastic) ties to the vehicle. The contractor is responsible for maintaining the configuration and protection of the trusses.

* If M270 Gr. 50W (M222) steel is proposed, chemistry for plate to be used shall first be approved by the Engineer as suitable for galvanizing and welding.

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
OVERHEAD SIGN STRUCTURE CANTILEVER TYPE I-C-A	Foot	
OVERHEAD SIGN STRUCTURE CANTILEVER TYPE II-C-A	Foot	
OVERHEAD SIGN STRUCTURE CANTILEVER TYPE III-C-A	Foot	
OVERHEAD SIGN STRUCTURE WALKWAY, TYPE A	Foot	
DRILLED SHAFT CONCRETE FOUNDATIONS	Cu. Yds.	

DESIGNED -	
CHECKED -	
DRAWN -	
CHECKED -	

EXAMINED	
PASSED	

NUMBER	REVISION	DATE

OSC-A-1

7/01/2006

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
-	-	-		
-				
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. -

- SHEETS

Horizontal Diagonal
Hidden lines show alternating direction of wind bracing in plane of lower chords.

Interior Diagonal

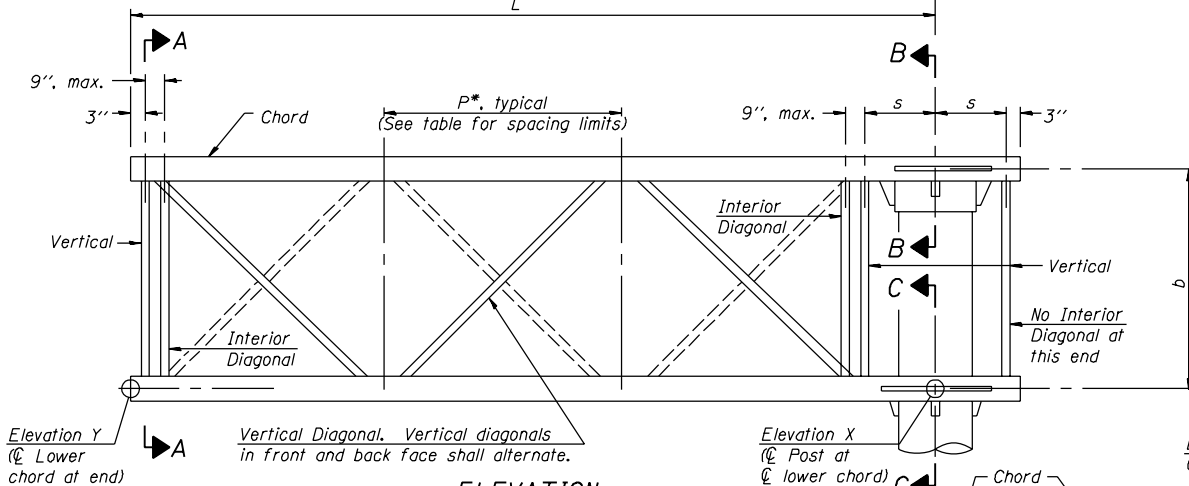
Horizontal

Horizontal Diagonal

Horizontal

PLAN
(Walkway not shown)

Horizontal
(Lower Chord - all vertical panel points)
(Upper Chord - end and each side of post only)



Note:
There are twice as many horizontal diagonals as there are vertical diagonals.

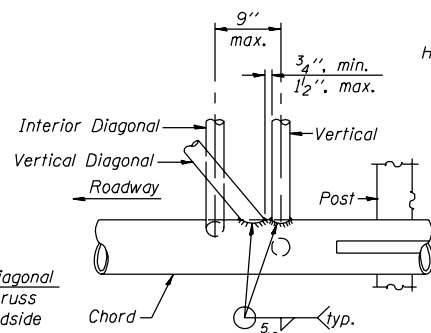


Diagram illustrating the connection of vertical and interior diagonal members to a chord. The vertical member is shown with a 3" dimension and the interior diagonal with a 9" max. dimension. The end plate is labeled $\frac{1}{8}$ " end plate**. The chord is labeled Typical both ends of each chord. The interior diagonal is labeled Interior Diagonal (Ends of truss only - roadside of post).

**** Contractor may alternatively use standard aluminum drive-fit cap to close ends.**

DESIGNED -	-	200
CHECKED -	EXAMINED	ENGINEER OF BRIDGE DESIGN
DRAWN -	PASSED	ENGINEER OF BRIDGES AND STRUCTURES
CHECKED -		

Unit Length (L)	Shop Camber at End
15'	1½"
16'-17'	1¾"
18'-20'	2"
21'-22'	2¼"
23'-25'	2½"
26'-27'	2¾"
28'-30'	3"
31'-32'	3¼"
33'-35'	3½"
36'-37'	4"
38'-40'	4½"

Diagram illustrating the measurement of shop camber at the end of a road. The diagram shows a cross-section of a road surface sloping upwards from the edge. A vertical post is located at the edge, with the 'Roadway face of post' indicated. The vertical distance from the roadway face to the 'Elevation X' is labeled 'Shop camber at end; measured without dead load deflection (See elevation of typical unit)'. The vertical distance from the roadway face to the 'Elevation Y' is labeled '90°'.

Upper Back Chord

Upper Front Chord

Interior Diagonal (Each End)
Reverse direction at ends of truss. See isometric view.

Sign Panel

Truss & Sign

For sign and walkway see Base Sheets C and OSC-A-7.

SECTION A-A

Lower Front Chord

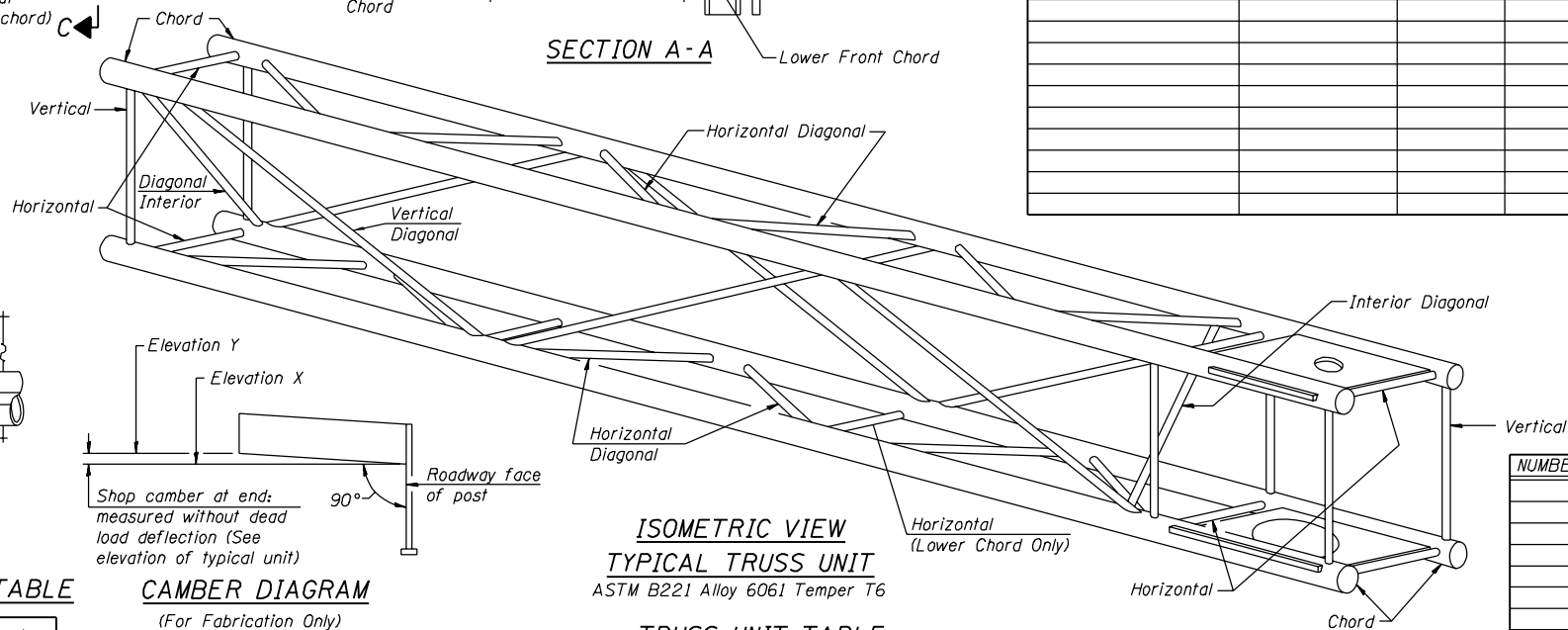
Back

a

b

Toe edge of diagonal member shall be cut back to facilitate throat thickness per AWS D1.1, Fig. 3.2

Horizontal

[illegible][illegible]

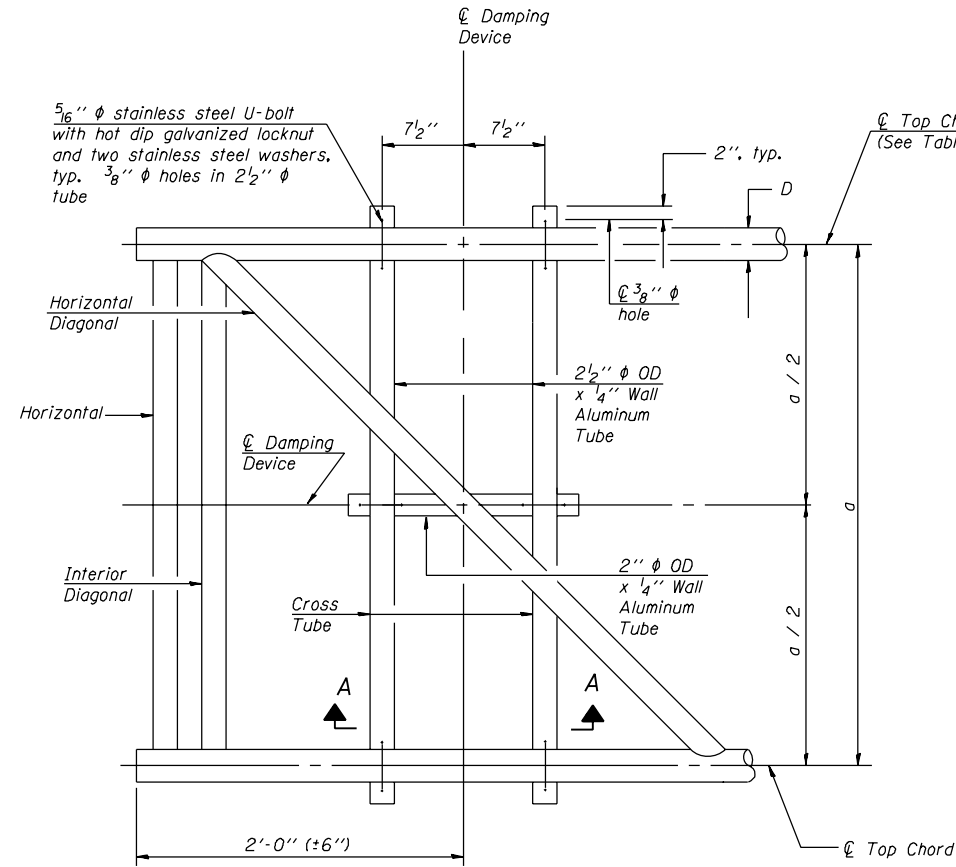
CANTILEVER SIGN STRUCTURES
TRUSS DETAILS
ALUMINUM TRUSS & STEEL POST

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

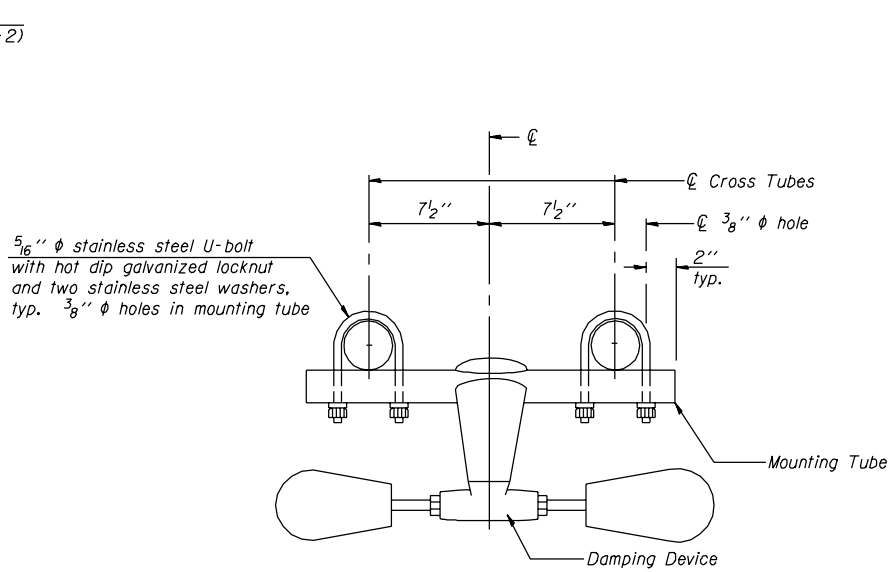
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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SHEET NO. -
- SHEETS

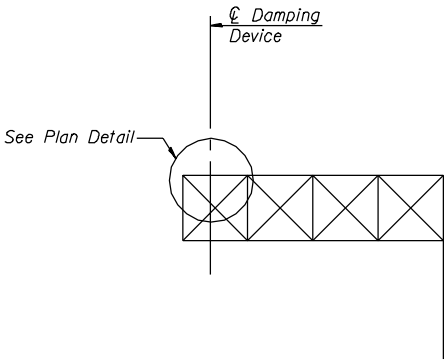
Contract #



PLAN DETAIL



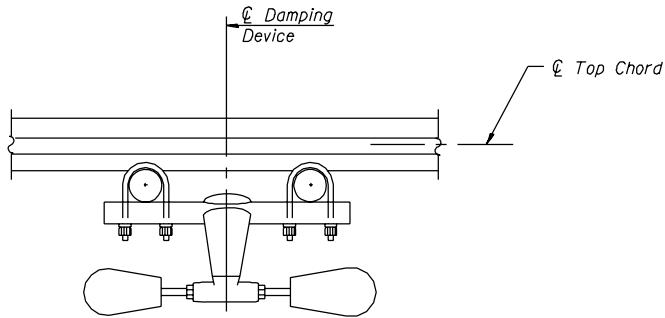
TRUSS DAMPING
DEVICE CONNECTION DETAIL



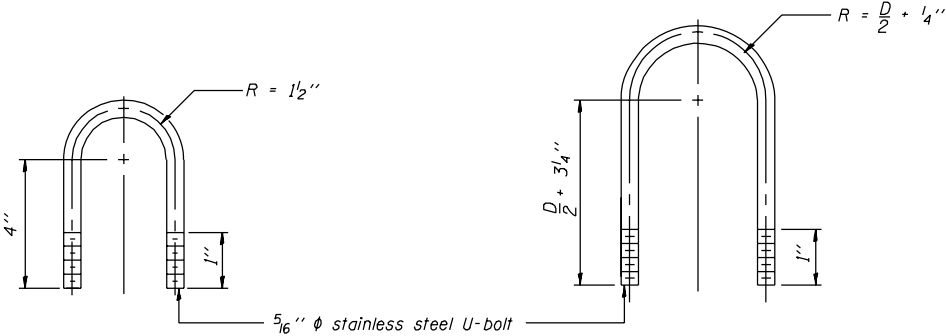
ELEVATION
Aluminum Cantilever
Sign Structure

GENERAL NOTES

- Damper: One damper per truss. (31 lbs. Stockbridge-Type Aluminum)
- Materials: Aluminum tubes shall be ASTM B221 alloy 6061 temper T6



SECTION A-A



DAMPING DEVICE MOUNTING
TUBE U-BOLT DETAIL

(Typical)

TOP CHORD TO CROSS TUBE
U-BOLT DETAIL

(Typical)

CANTILEVER SIGN STRUCTURE
DAMPING DEVICE

DESIGNED -	-	200
CHECKED -	EXAMINED	
DRAWN -	PASSED	ENGINEER OF BRIDGE DESIGN
CHECKED -		ENGINEER OF BRIDGES AND STRUCTURES

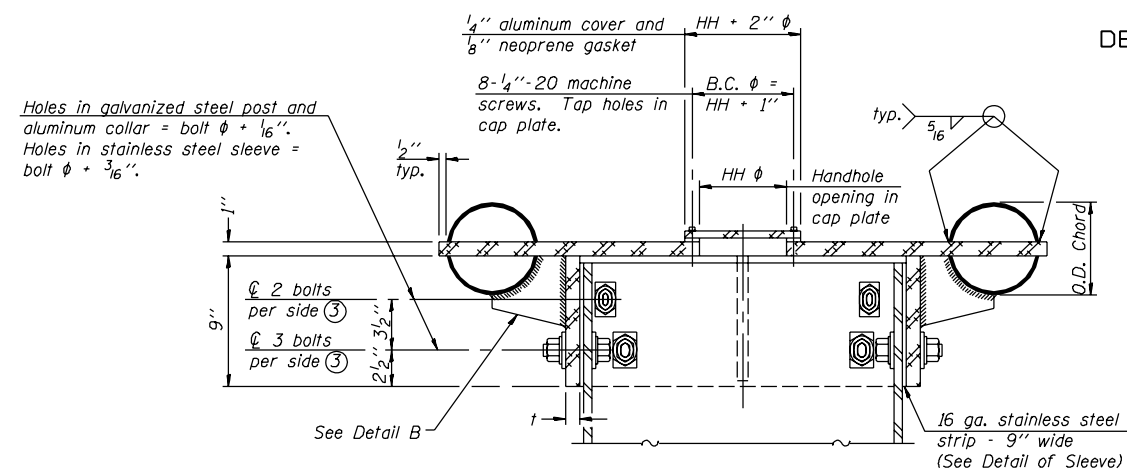
OSC-A-D

7/01/2006

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FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

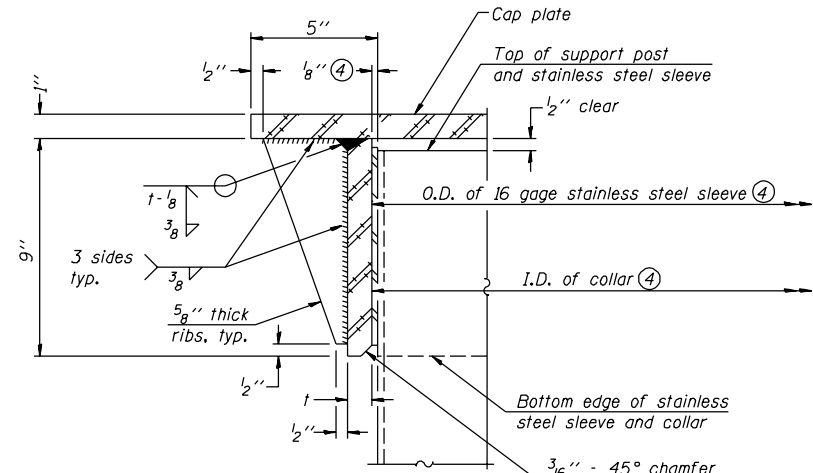
Contract #



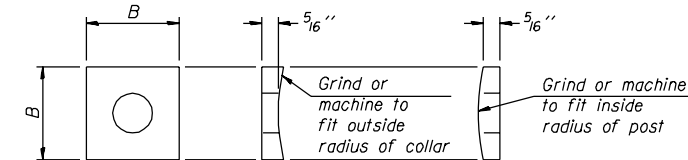
- ④ Collar I.D. shall be manufactured to correspond to O.D. of actual galvanized post and stainless steel sleeve plus 1/8" (±1/16"). Maximum gap between post and collar at any location equals 1/8" before tightening bolts.

SECTION B-B

Bolts, washers (including contoured washers), and locknuts shall be stainless steel.



DETAIL A
(Two locations)



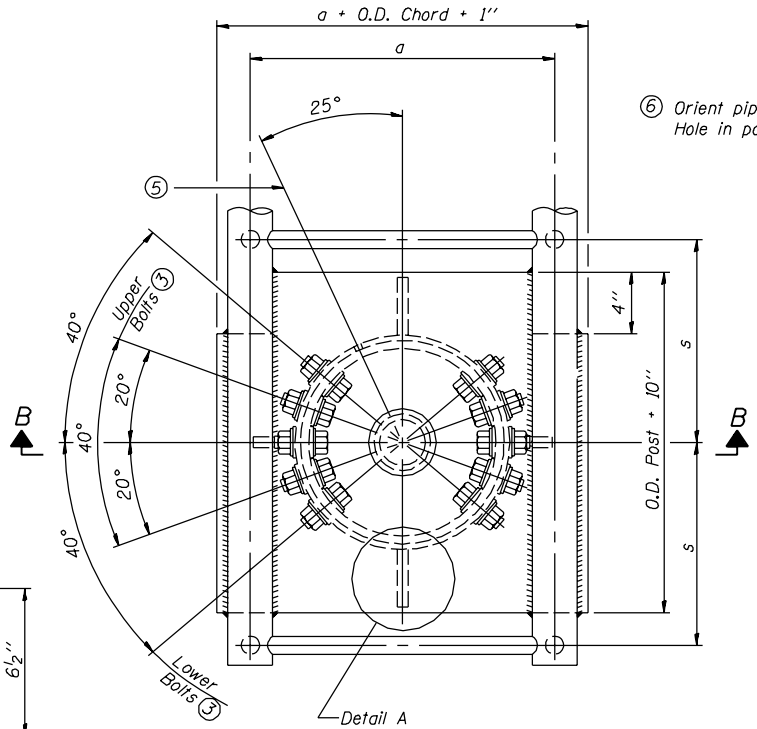
CONTOURED WASHERS

Bolt Size	Contoured Washers	
	Hole Dia.	B
7/8"	1"	2 1/2"
1"	1 1/8"	3"
1 1/4"	1 3/8"	3 1/4"

DETAIL OF STAINLESS STEEL SLEEVE

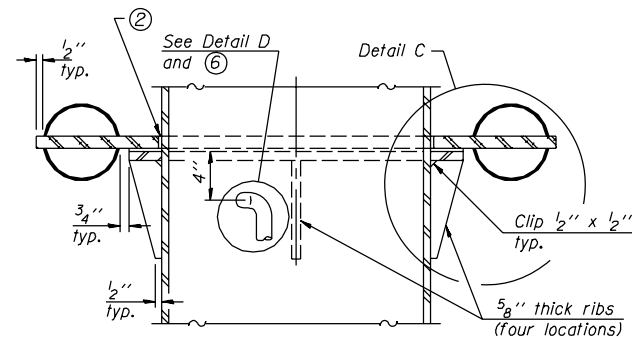
Weld to post after galvanizing. (Prepare post surface to insure tight, uniform fit and allow welding.) Welds to be 1/2" long at 6" cts. along top edge and at 1/4" opening.

NUMBER	REVISION	DATE

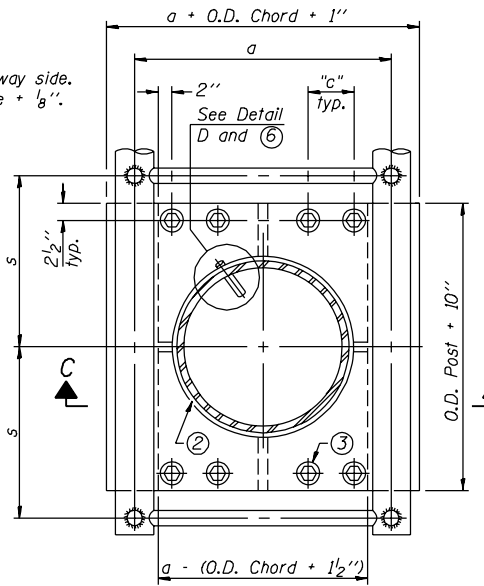


PLAN VIEW - TOP OF COLUMN

- ⑤ Optional full penetration weld in collar. (Two locations maximum....(180° apart)....X-ray or UT 100%)

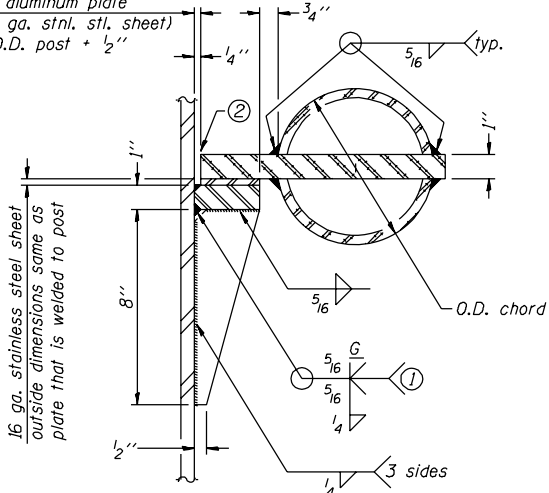


SECTION C-C



SECTION THRU POST ABOVE LOWER CHORDS

Hole in aluminum plate (and 16 ga. stnl. stl. sheet) to be O.D. post + 1/2"



DETAIL C

- ① Grind top if required to fully seat aluminum plate and stainless steel sheet.
② After tightening lower connection bolts, fill gap with non-hardening, silicone caulk suitable for exterior exposure and acceptable to the Engineer. Cost is included in Overhead Sign Structure Cantilever.

CANTILEVER SIGN STRUCTURES
JUNCTURE DETAILS
ALUMINUM TRUSS & STEEL POST

Truss Type	Post Size	Upper & Lower Connection Bolt Diameter ③	Lower Juncture Bolt Spacing Dimension "c" ③	Opening in Cap Plate "HH"	Collar Thickness (t)	Side Ribs	
I-C-A	16" φ (83#/'')	7/8"	3 1/4"	8"	5/8"	1 3/4"	2 1/4"
II-C-A	24" φ (125#/'')	1"	3 1/2"	12"	7/8"	2"	1 1/4"
III-C-A (35' max.)	24" φ (125#/'')	1 1/4"	3 1/2"	12"	7/8"	2"	1"
III-C-A (>35' to 40')	24" φ (171#/'')	1 1/4"	3 1/2"	12"	7/8"	2"	1"

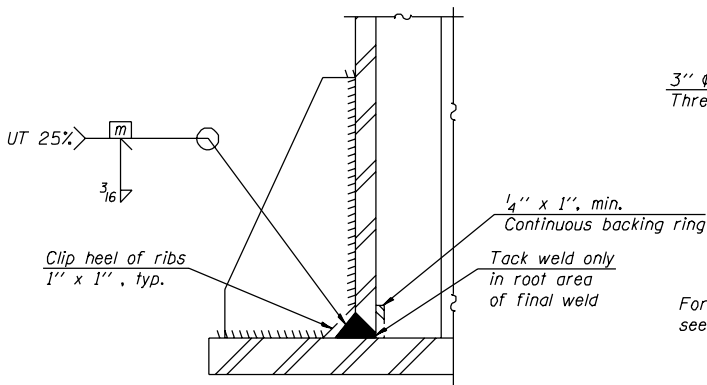
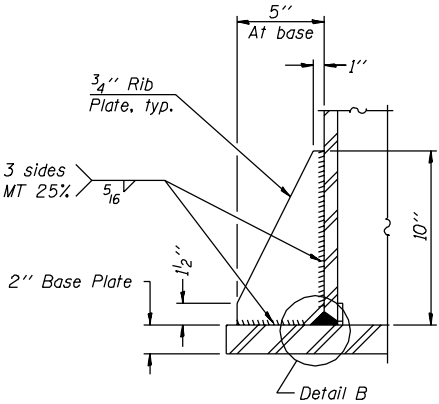
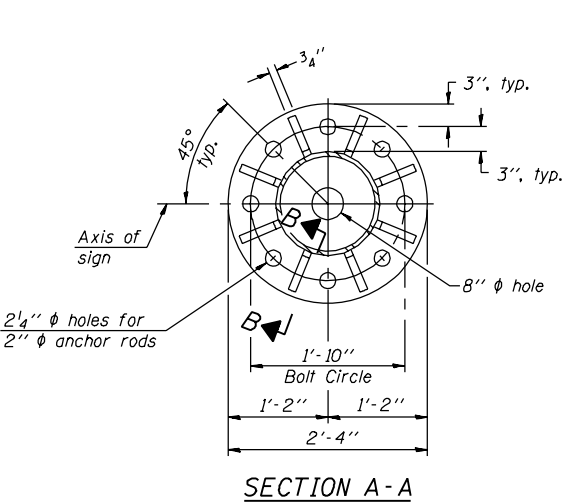
- ③ Upper and lower connection bolts in collar and bolts at lower chord connection shall be high strength with matching locknuts. Connection bolts shall have 2 stainless steel flat washers each.

DESIGNED -	200
CHECKED -	EXAMINED
DRAWN -	PASSED
CHECKED -	ENGINEER OF BRIDGES AND STRUCTURES

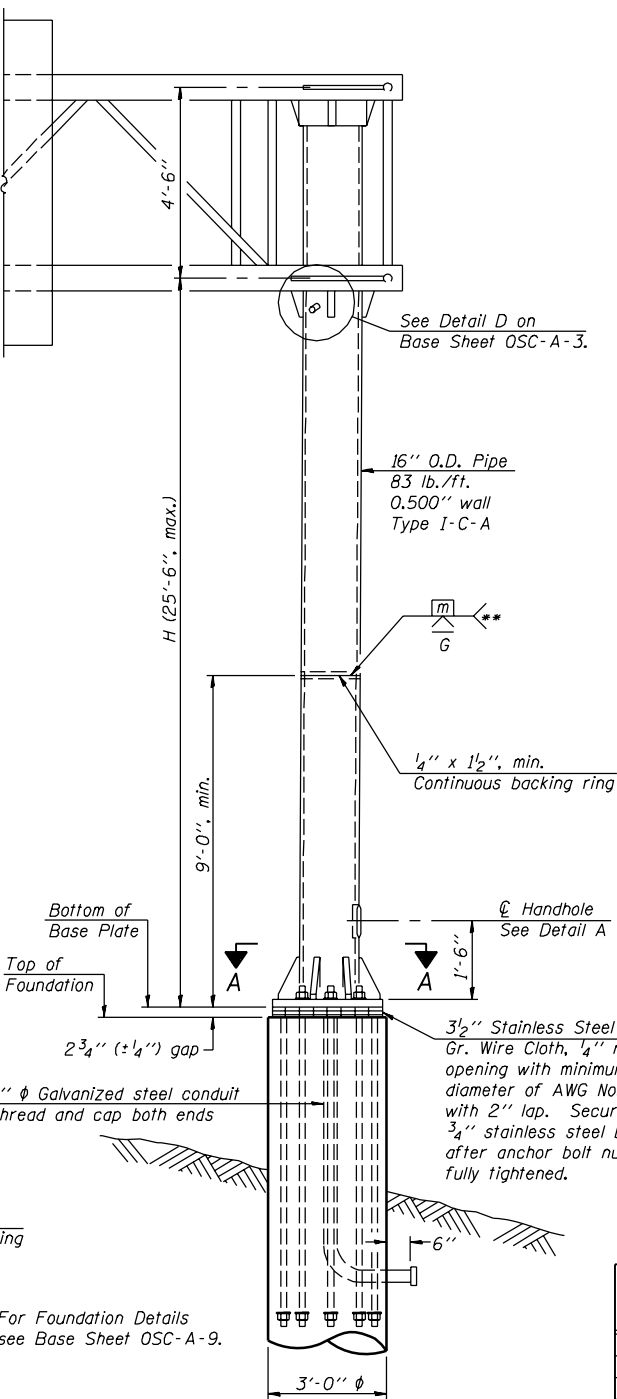
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DEPARTMENT OF TRANSPORTATION

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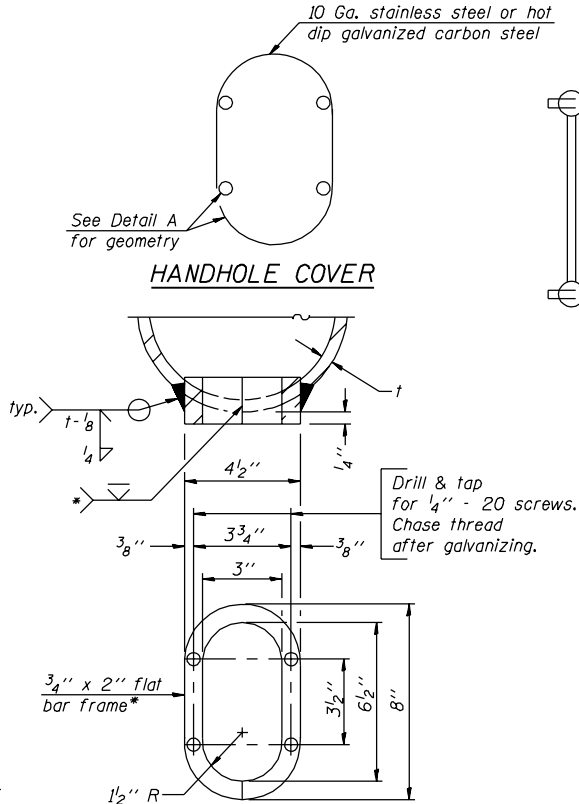
Contract #



DETAIL B
(Typical rib)



FRONT ELEVATION

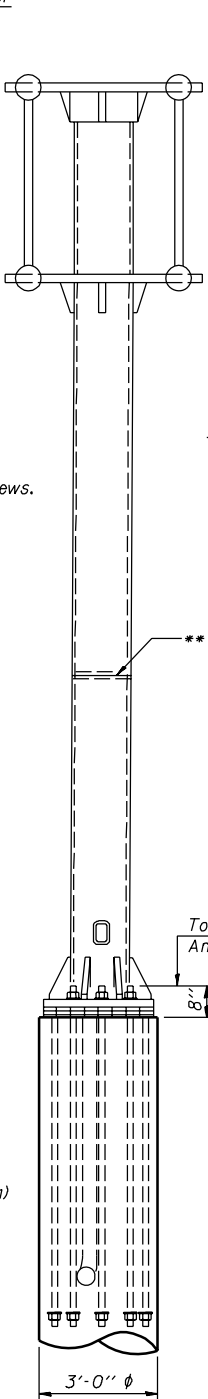


DETAIL A

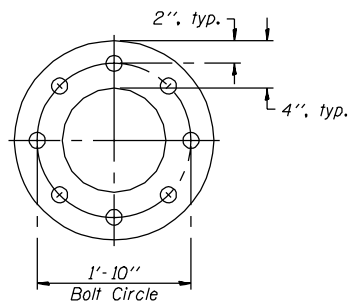
- * Bent bars may be butt welded top and bottom or bottom only. In lieu of fabricated handhole frame as shown, may cut from 2" plate (rolling direction vertical). All cut faces to be ground to ANSI Roughness of 500 μ in or less.
- ** Butt welded joint in post is only allowed for post heights (H) over 20 ft. in length. If used, weld procedure must be preapproved by Engineer and joint shall receive 100% RT or UT (tension criteria) at Contractor's expense.

Structure Number	Station	H

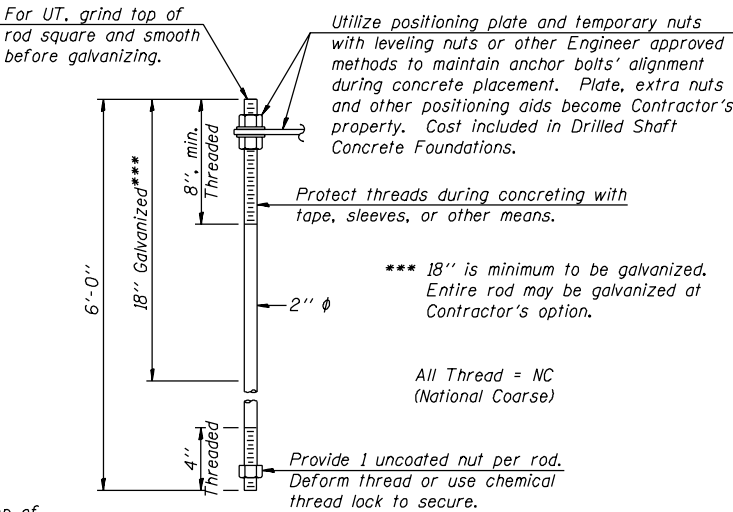
Note: "H" based on 15'-0" or actual sign height, whichever is greater.



SIDE ELEVATION



SUGGESTED POSITIONING PLATE



ANCHOR ROD DETAIL

Anchor rods shall conform to AASHTO M314 Grade 55 and meet Charpy V-Notch (CVN) energy of 15 lb.-ft. at 10° F. before galvanizing. Galvanize the upper 18" (minimum***) and associated M291, Grade A, C or DH heavy hex nuts and hardened washers per AASHTO M232. No welding shall be permitted on rods. Provide an unfinished nut at bottom, a hexagon locknut and washer above base plate and a leveling nut and washer below base plate. Nuts shall each be tightened with 200 lb.-ft. minimum torque against base plate. Before or after threading, but before galvanizing, each anchor rod shall be ultrasonically tested (UT) by a Level II or III inspector, qualified in accord with ANSI guidelines, using a straight beam, 1/2" ϕ 3.5 mhz. transducer, to insure no rejectable flaws exist in the upper 18" (tension criteria). Cost of testing included in Drilled Shaft Concrete Foundations.

CANTILEVER SIGN STRUCTURES
TYPE I-C-A TRUSS SUPPORT POST
ALUMINUM TRUSS & STEEL POST

DESIGNED -	200
CHECKED -	EXAMINED
DRAWN -	PASSED
CHECKED -	ENGINEER OF BRIDGES AND STRUCTURES

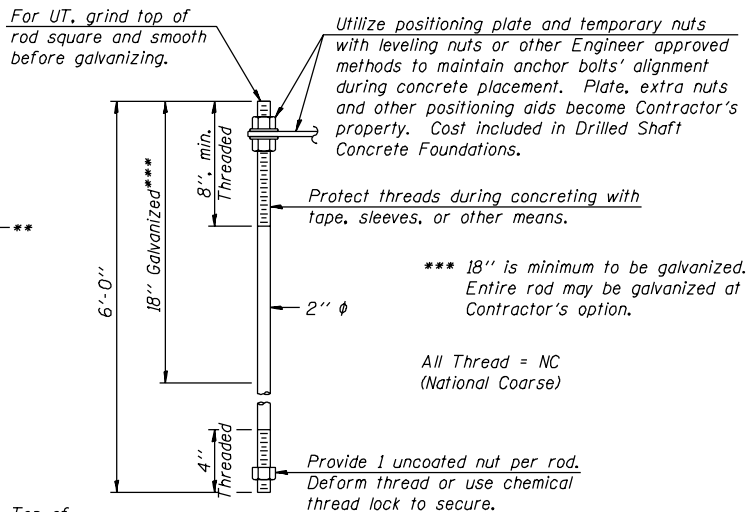
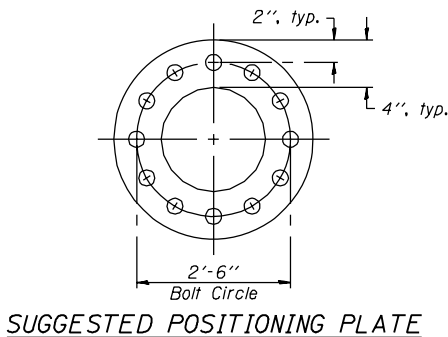
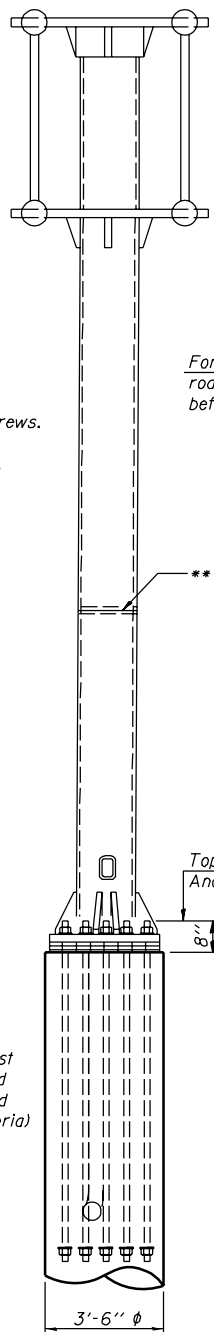
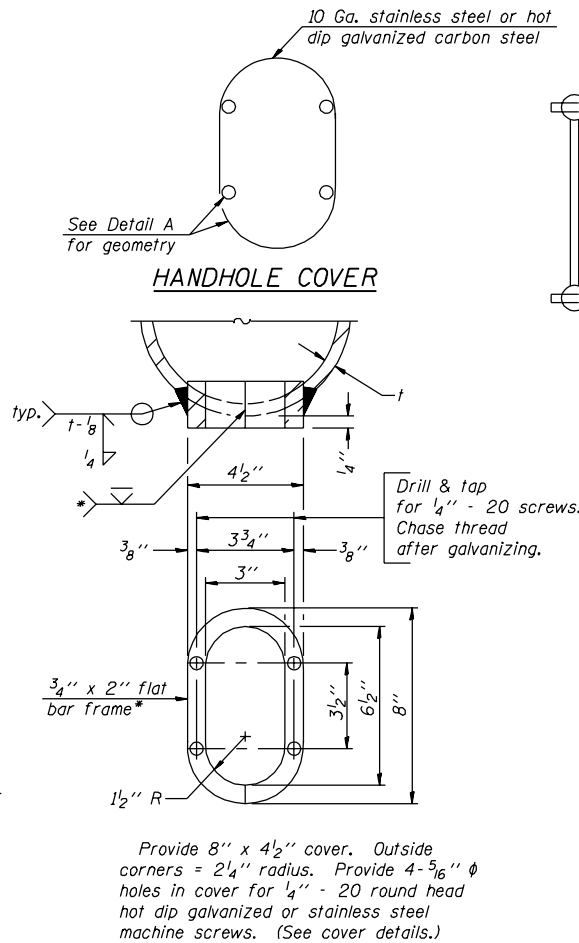
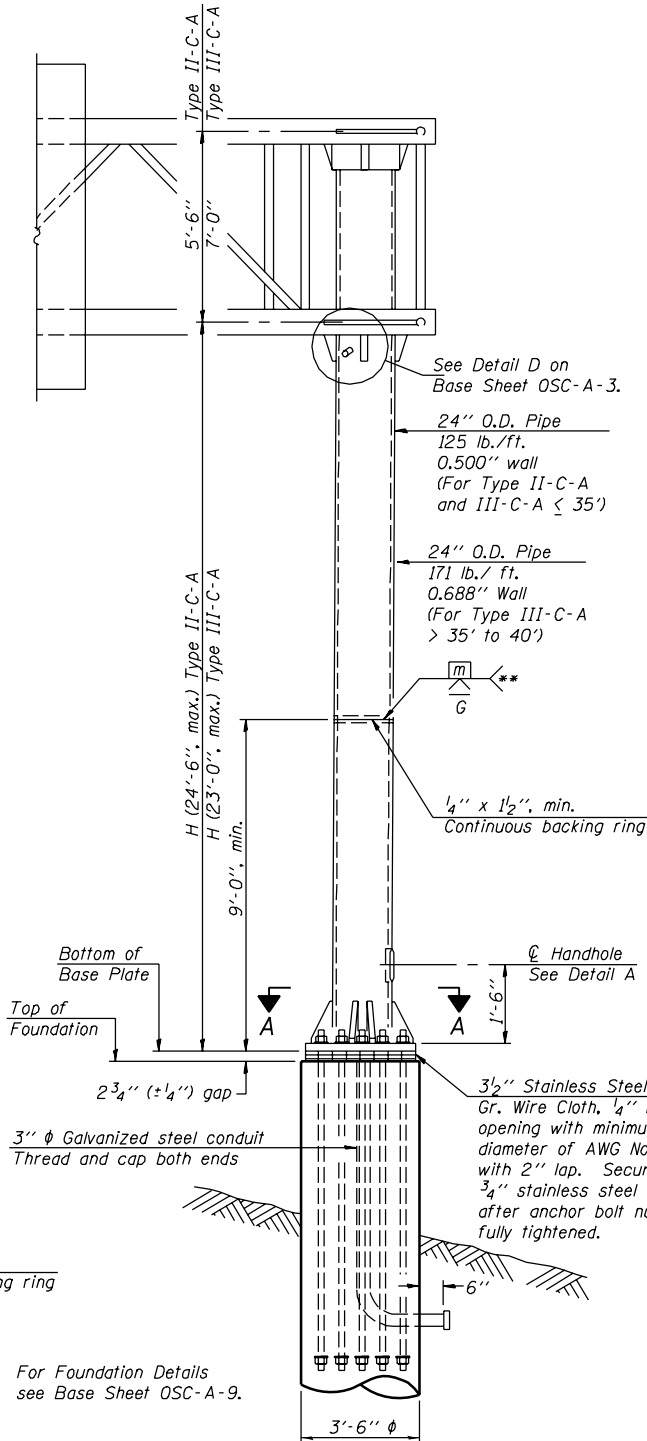
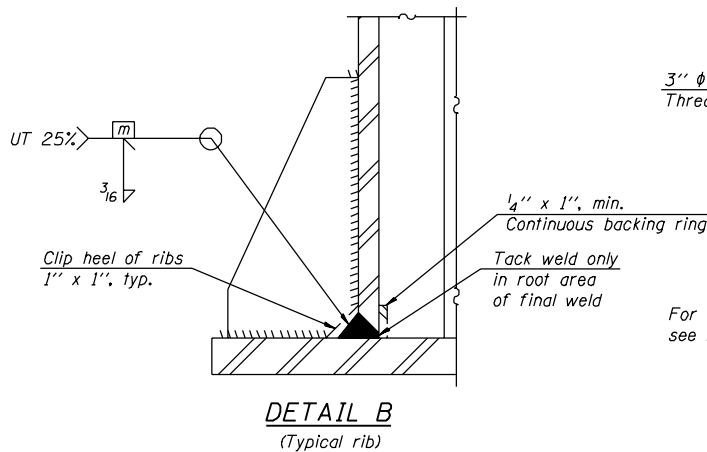
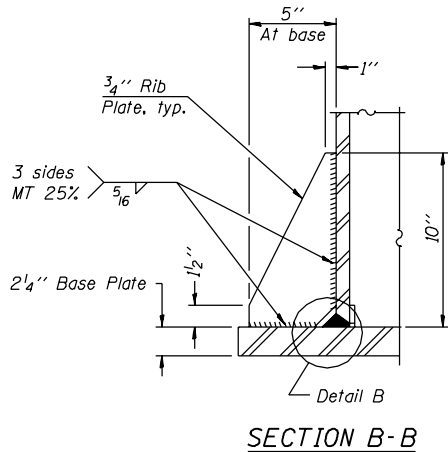
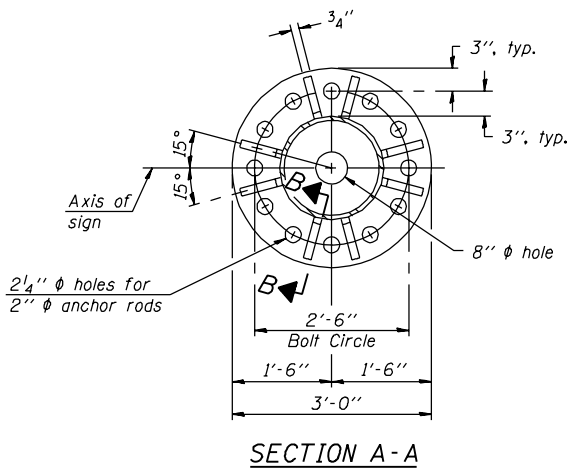
NUMBER	REVISION	DATE

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FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT -	

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Contract #



Anchor rods shall conform to AASHTO M314 Grade 55 and meet Charpy V-Notch (CVN) energy of 15 lb.-ft. at 10° F. before galvanizing. Galvanize the upper 18" (minimum***). and associated M291, Grade A, C or DH heavy hex nuts and hardened washers per AASHTO M232. No welding shall be permitted on rods. Provide an unfinished nut at bottom, a hexagon locknut and washer above base plate and a leveling nut and washer below base plate. Nuts shall each be tightened with 200 lb.-ft. minimum torque against base plate. Before or after threading, but before galvanizing, each anchor rod shall be ultrasonically tested (UT) by a Level II or III inspector, qualified in accord with ANSI guidelines, using a straight beam, 1/2" ϕ 3.5 mhz. transducer, to insure no rejectable flaws exist in the upper 18" (tension criteria). Cost of testing included in Drilled Shaft Concrete Foundations.

CANTILEVER SIGN STRUCTURES
TYPE II-C-A & III-C-A TRUSS SUPPORT POST
ALUMINUM TRUSS & STEEL POST

DESIGNED -	-	200
CHECKED -	EXAMINED	
DRAWN -	PASSED	ENGINEER OF BRIDGE DESIGN
CHECKED -		ENGINEER OF BRIDGES AND STRUCTURES

NUMBER	REVISION	DATE

Structure Number	Station	H

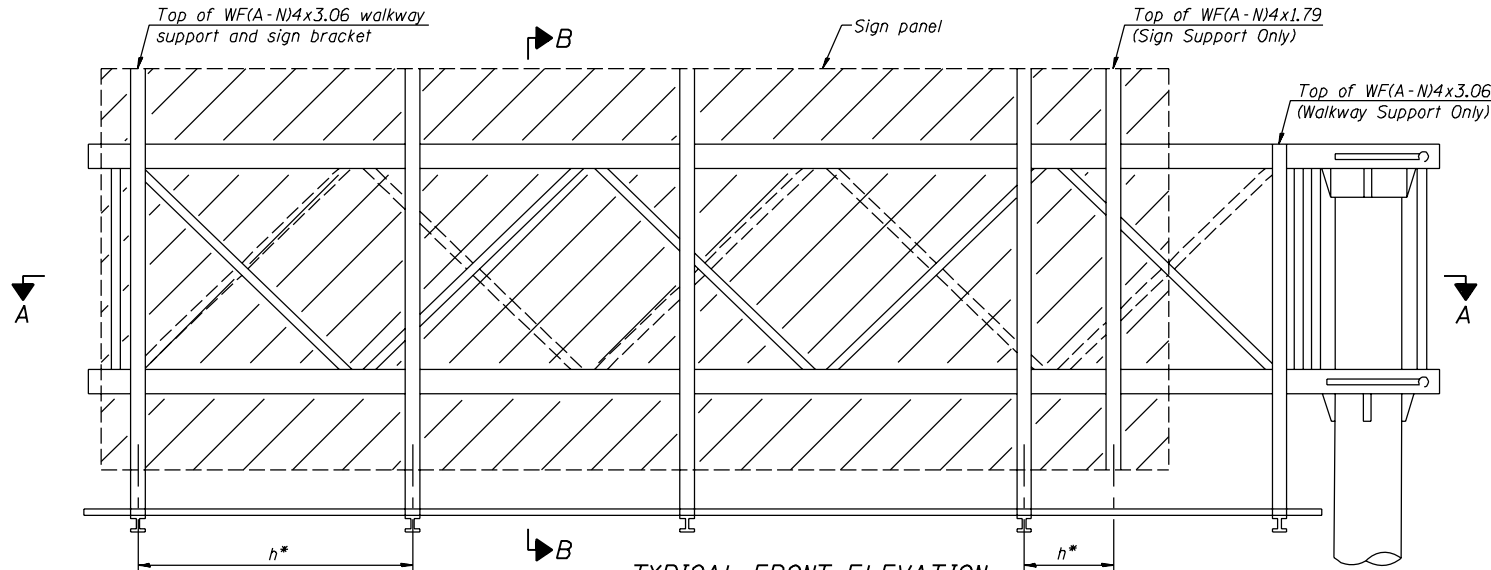
Note: "H" based on 15'-0" or actual sign height, whichever is greater.

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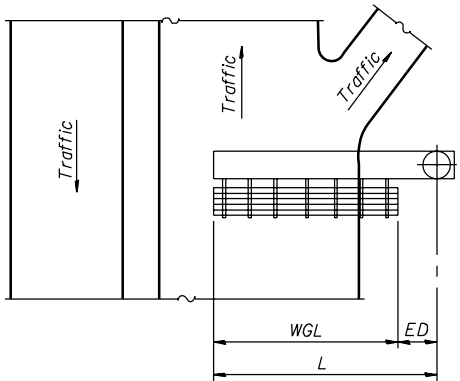
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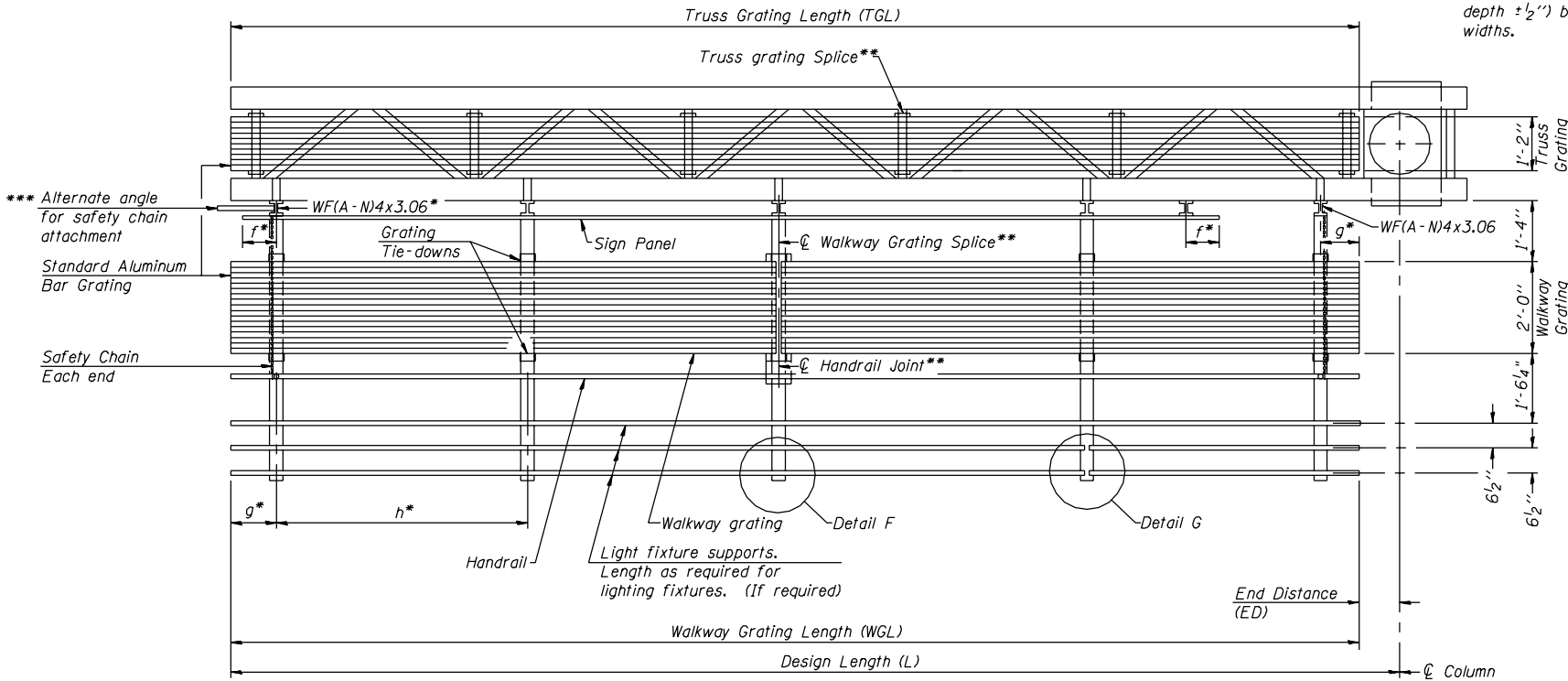
Contract #



TYPICAL FRONT ELEVATION
With lights and handrail omitted for clarity.



**PLAN
WALKWAY AND HANDRAIL SKETCH**
(Road plan beneath truss varies)



SECTION A-A

Truss grating to facilitate inspection shall run full length of cantilevers. Cost of truss grating is included in Overhead Sign Structure Cantilever.

Handrail and walkway grating shall span a minimum of three brackets between splices.
** Use and location of handrail joints or grating splices are optional, based on lengths needed and material availability.

$$TGL = L - \left(\frac{\text{Post O.D.}}{2} + 6'' \right)$$

NUMBER	REVISION	DATE

DESIGNED -
CHECKED -
DRAWN -
CHECKED -

EXAMINED	ENGINEER OF BRIDGE DESIGN
PASSED	ENGINEER OF BRIDGES AND STRUCTURES

OSC-A-6

7/01/2006

Structure Number	Station	WGL	ED	TGL

Notes:

* Space walkway brackets WF(A-N)4x3.06 and sign brackets WF(A-N)4x1.79 for efficiency and within limits shown:

f = 12" maximum, 4" minimum (End of sign to center of nearest bracket)

g = 12" maximum, 4" minimum (End of walkway to center of nearest bracket)

h = 6'-0" maximum (center to center sign and/or walkway support brackets, WF(A-N)4x1.79 or WF(A-N)4x3.06)

*** If walkway bracket at safety chain location is behind sign, add angle to bracket. See alternate safety chain attachment on base sheet OSC-A-8

For details of sign placement, sign/walkway brackets, truss and walkway gratings, grating splices and Section B-B, see Base Sheet OSC-A-7.

For details of handrail, handrail joint, safety chain and Details F and G, see Base Sheet OSC-A-8.

BRACKET TABLE

Sign Width		Number Brackets Required
Greater Than	Less Than or Equal To	
	8'-0"	2
8'-0"	14'-0"	3
14'-0"	20'-0"	4
20'-0"	26'-0"	5
26'-0"	32'-0"	6

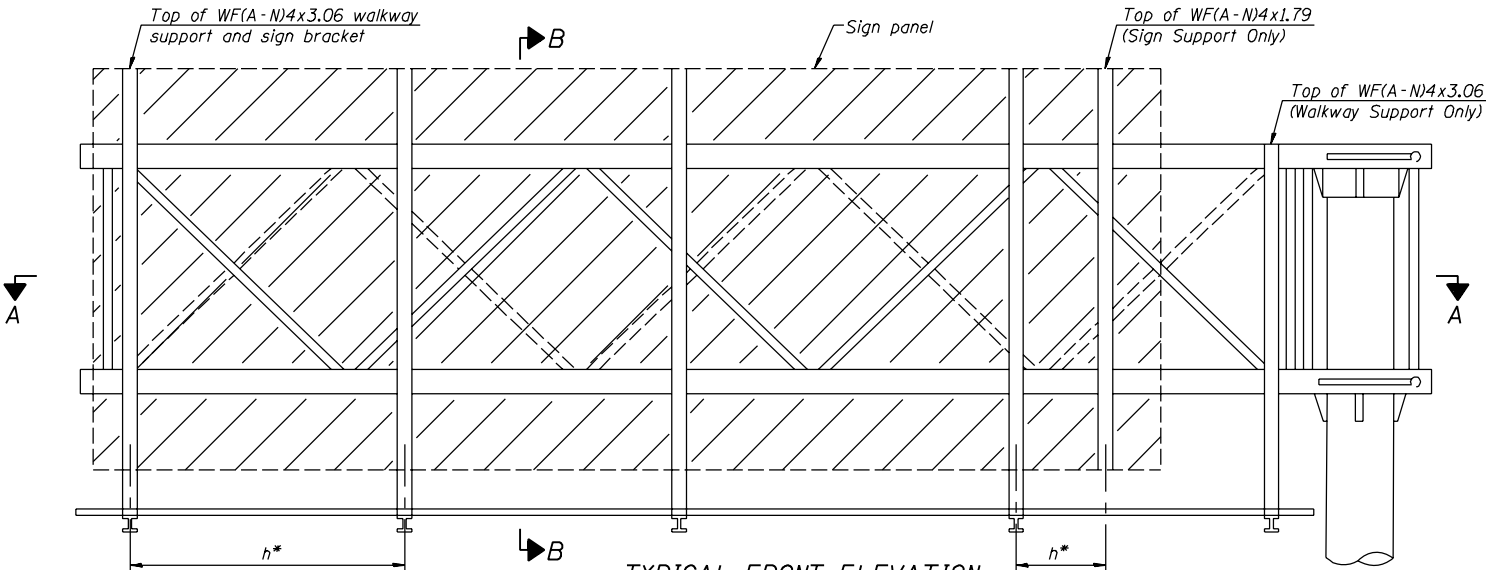
**CANTILEVER SIGN STRUCTURES
ALUMINUM WALKWAY DETAILS
ALUMINUM TRUSS & STEEL POST**

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

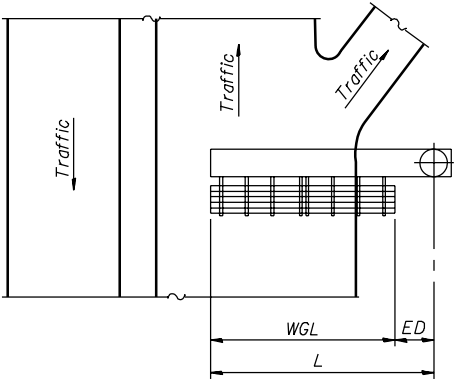
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
-	-	-	-	-
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT -	

SHEET NO. -
- SHEETS

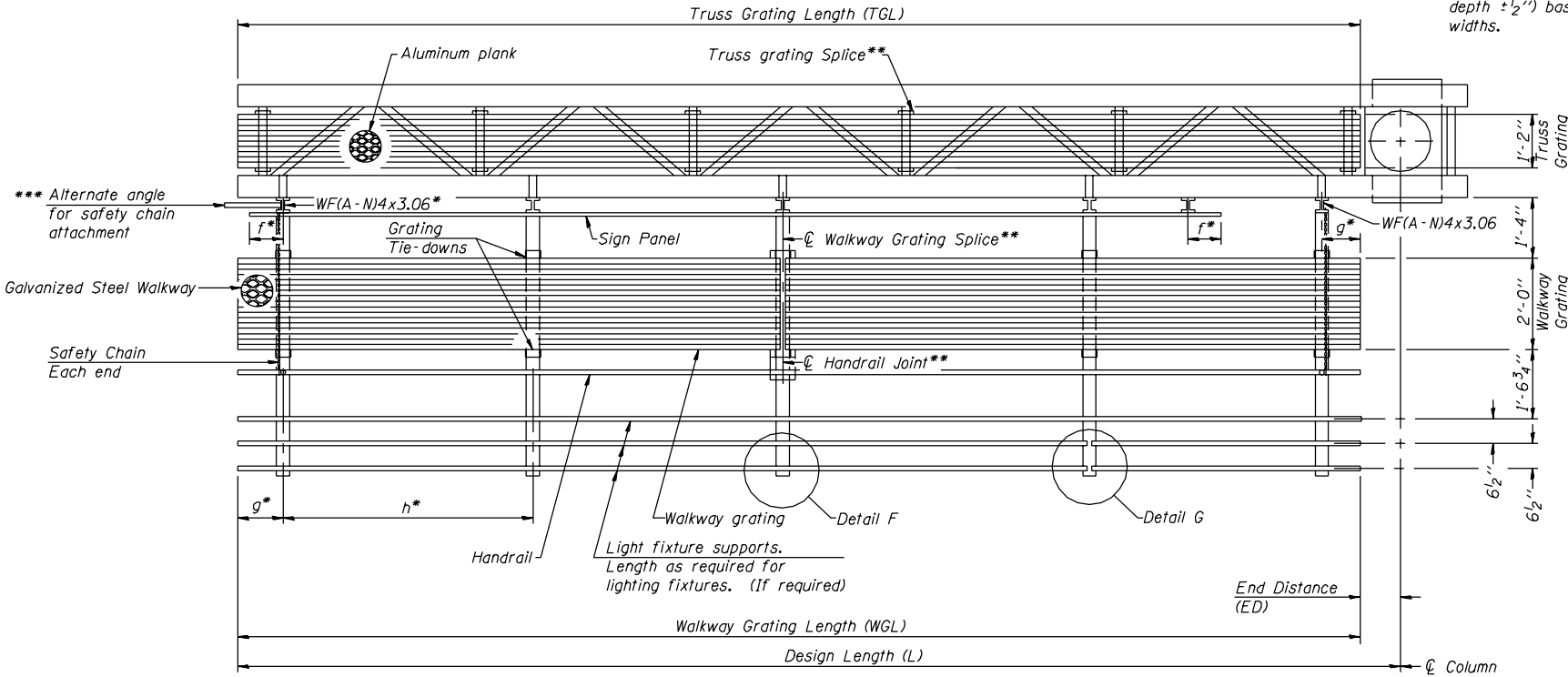
Contract #



TYPICAL FRONT ELEVATION
With lights and handrail omitted for clarity.



**PLAN
WALKWAY AND HANDRAIL SKETCH**
(Road plan beneath truss varies)



SECTION A-A

Truss grating to facilitate inspection shall run full length of cantilevers. Cost of truss grating is included in Overhead Sign Structure Cantilever.

Handrail and walkway grating shall span a minimum of three brackets between splices.
** Use and location of handrail joints or grating splices are optional, based on lengths needed and material availability.

$$TGL = L - \left(\frac{\text{Post O.D.}}{2} + 6'' \right)$$

NUMBER	REVISION	DATE

DESIGNED -
CHECKED -
DRAWN -
CHECKED -

EXAMINED	200
PASSED	ENGINEER OF BRIDGE DESIGN
	ENGINEER OF BRIDGES AND STRUCTURES

OSC-A-6S

7/01/2006

Structure Number	Station	WGL	ED	TGL

Notes:
* Space walkway brackets WF(A-N)4x3.06 and sign brackets WF(A-N)4x1.79 for efficiency and within limits shown:

f = 12" maximum, 4" minimum (End of sign to center of nearest bracket)
g = 12" maximum, 4" minimum (End of walkway to center of nearest bracket)
h = 6'-0" maximum (center to center sign and/or walkway support brackets, WF(A-N)4x1.79 or WF(A-N)4x3.06)

*** If walkway bracket at safety chain location is behind sign, add angle to bracket. See alternate safety chain attachment on base sheet OSC-A-8.

For details of sign placement, sign/walkway brackets, truss and walkway gratings, grating splices and Section B-B, see Base Sheet OSC-A-7S.
For details of handrail, handrail joint, safety chain and Details F and G, see Base Sheet OSC-A-8.

BRACKET TABLE

Sign Width		Number Brackets Required
Greater Than	Less Than or Equal To	
	8'-0"	2
8'-0"	14'-0"	3
14'-0"	20'-0"	4
20'-0"	26'-0"	5
26'-0"	32'-0"	6

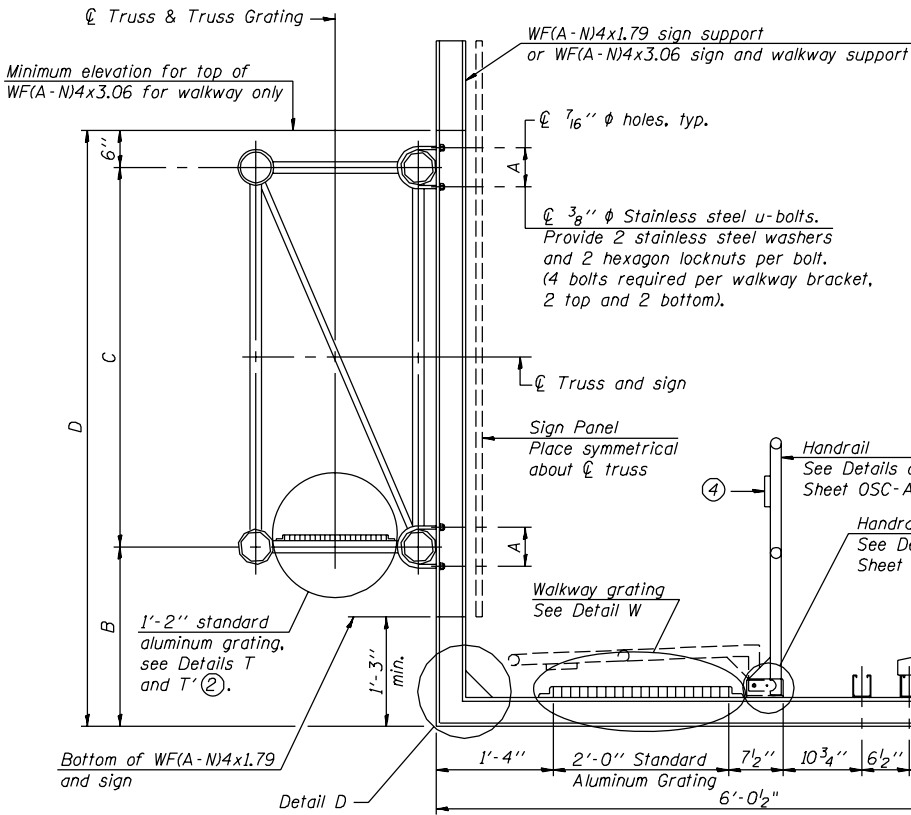
**CANTILEVER SIGN STRUCTURES
ALTERNATE STEEL WALKWAY DETAILS
ALUMINUM TRUSS & STEEL POST**

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
-	-	-	-	-
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

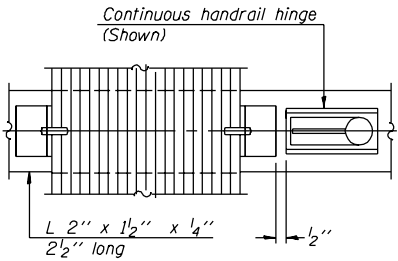
Contract #

SHEET NO. -
- SHEETS

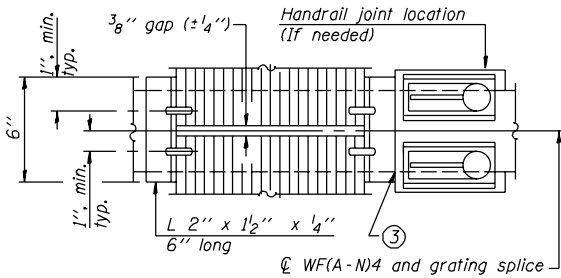


SECTION B-B

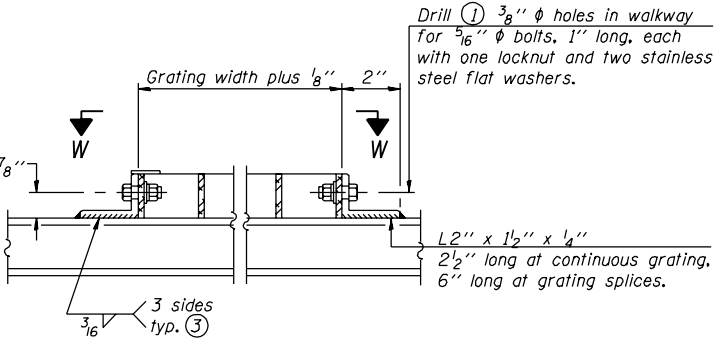
Sign shall be even with the top of the bracket, but it may extend no more than 6" above the top of the bracket for field adjustments.



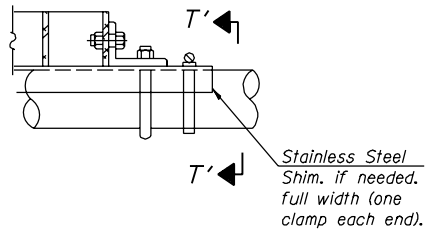
(CONTINUOUS WALKWAY GRATING)



(AT WALKWAY GRATING SPLICE)

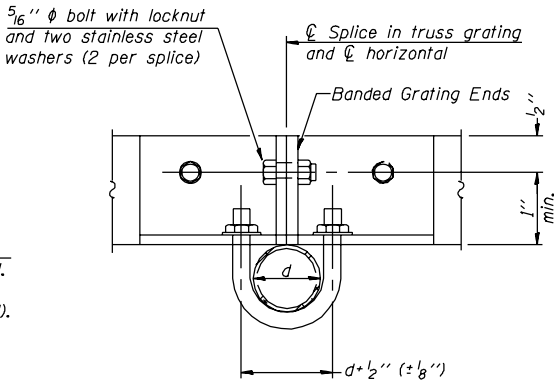


DETAIL W
(Walkway grating)

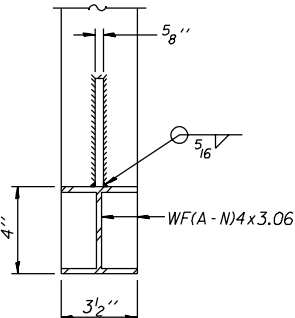


DETAIL T'
(Truss grating splice)

Details not shown same as Detail T. Alternate materials may be used subject to the Engineer's review and approval.

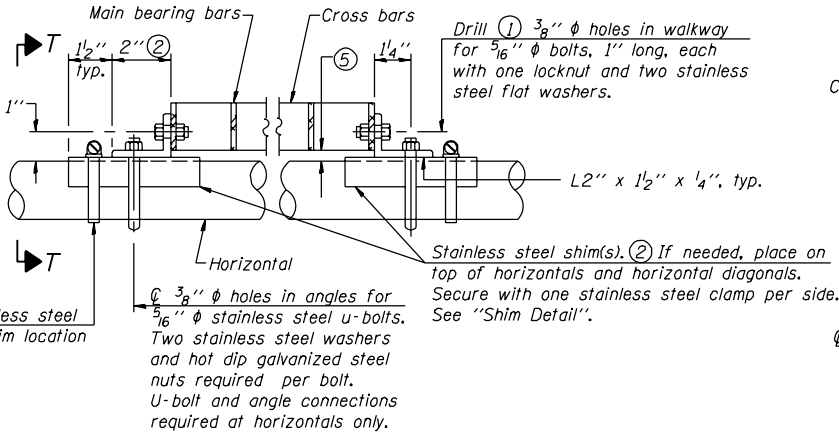


SECTION T'-T'



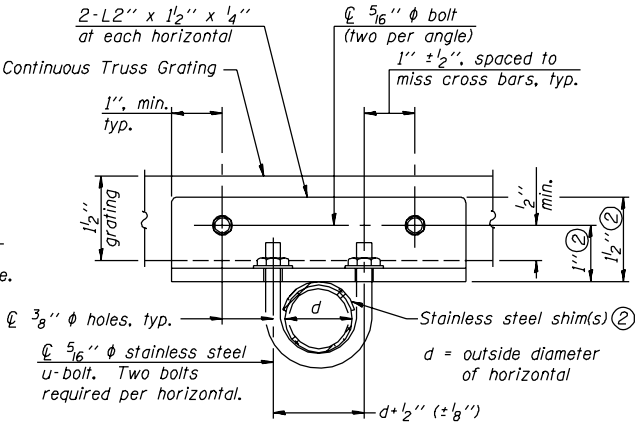
SECTION D-D

Screw type stainless steel tube clamp at shim location

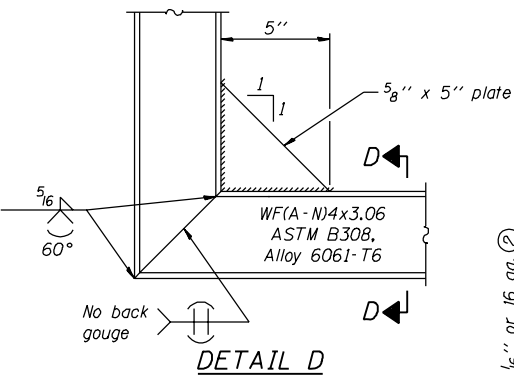


DETAIL T

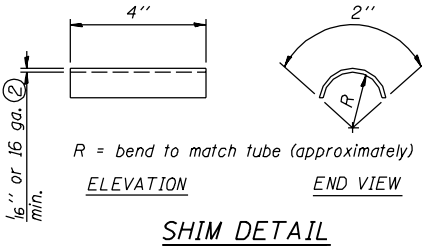
(Continuous Truss grating)



SECTION T-T'



DETAIL D



SHIM DETAIL

NUMBER	REVISION	DATE

- Drilling holes in grating may be done in shop or field, based on Contractor's preference and subject to accurate alignment.
- Stainless steel shims shall be placed as shown in Detail T if needed to compensate for alignment variations between horizontal and diagonal pipes beyond adjustment provided by angles. Thicker shims may be used subject to shims performing properly.
- If Handrail Joint present, weld angle to WF(A-N)4 and 1/4" extension bars. (See Base Sheet OSC-A-8.)
- 1/8" x 1/2" x 2" welded to handrail posts to protect locations that contact grating.
- Tube to grating gap may vary from 0 to 1/2", max. to align walkway, allow for camber, etc.

Structure Number	Station	A	B	C	D

CANTILEVER SIGN STRUCTURES
WALKWAY DETAILS
ALUMINUM TRUSS & STEEL POST

DESIGNED -	-	200
CHECKED -	EXAMINED	
DRAWN -	PASSED	ENGINEER OF BRIDGE DESIGN
CHECKED -		ENGINEER OF BRIDGES AND STRUCTURES

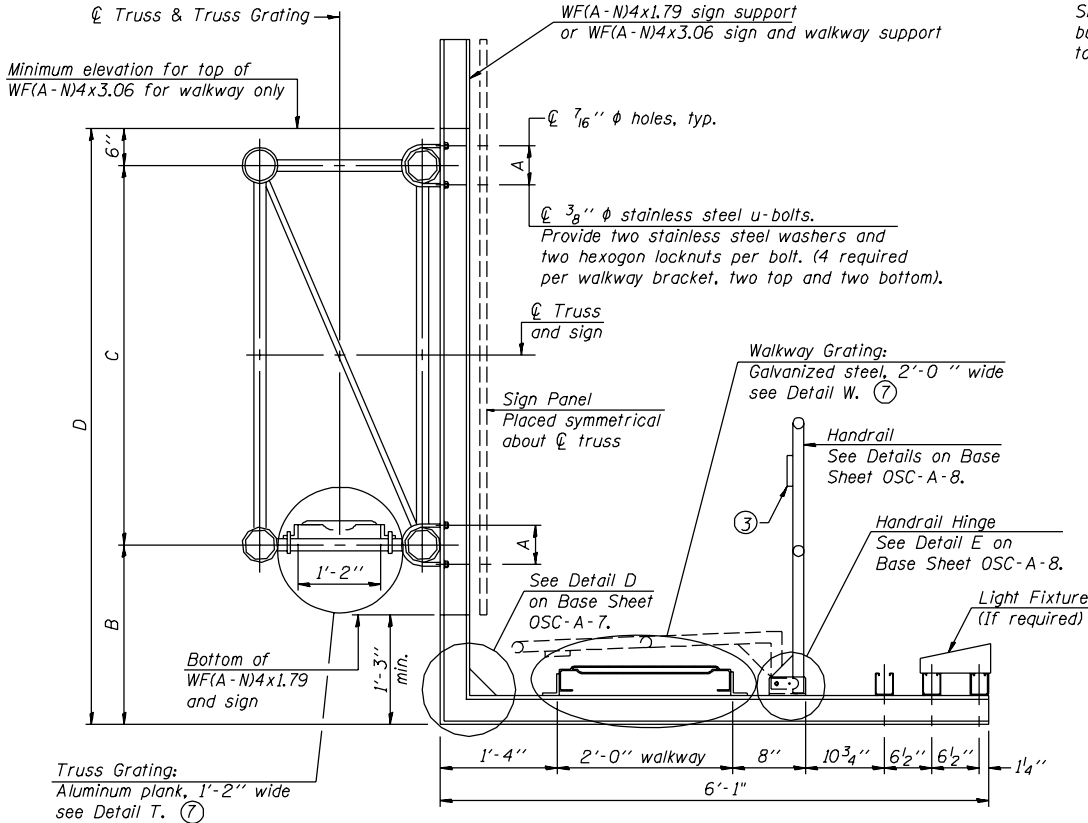
OSC-A-7 7/01/2006

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

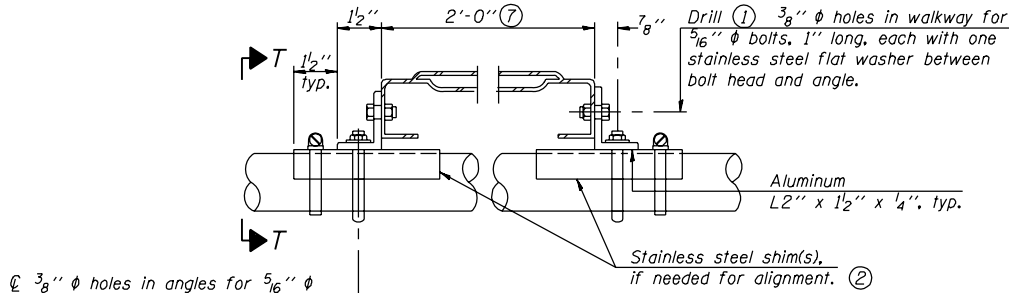
Sign shall be even with the top of the bracket,
but it may extend no more than 6" above the
top of the bracket for field adjustments.

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
-	-	-	-	-
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT				

Contract #

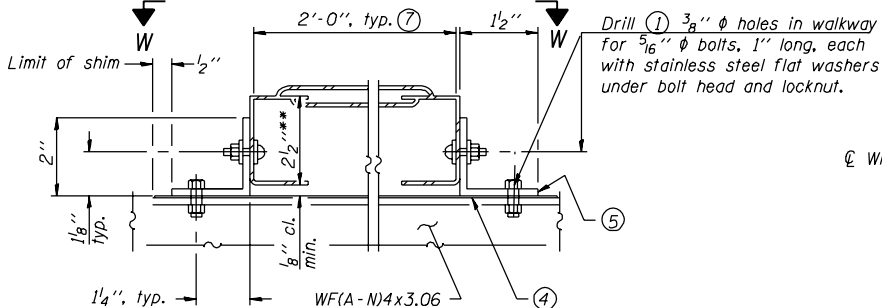


SECTION B-B

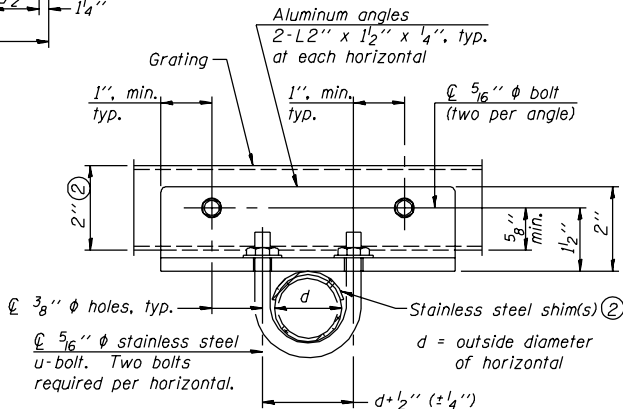


DETAIL T

(Truss grating at horizontal)



DETAIL W
GALVANIZED STEEL WALKWAY GRATING

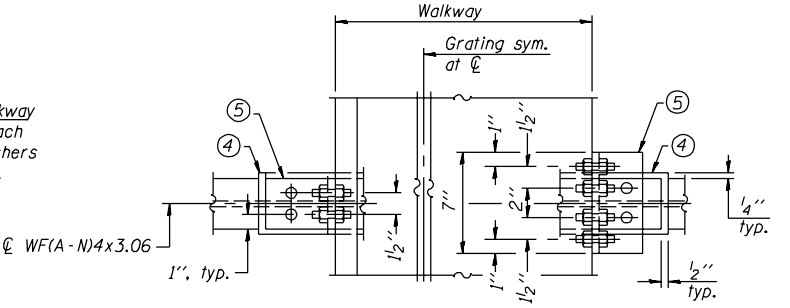


SECTION T-T

(Truss Grating Continuous)

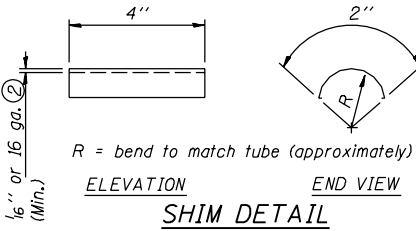
ALUMINUM TRUSS GRATING

Structure Number	Station	A	B	C	D



WALKWAY GRATING CONTINUOUS AT WALKWAY GRATING SPLICE

SECTION W-W



- Drilling holes in grating may be done in shop or field, based on Contractor's preference and subject to accurate alignment.
- Stainless steel shims shall be placed under angles at horizontals and horizontal diagonals if needed to compensate for alignment variations and differences in horizontal diagonal pipe sizes beyond adjustment provided by angles. Secure with one stainless steel clamp per location, see "Shim Detail". Thicker shim plates may be used when needed subject to shims performing properly.
- 1/8" x 1/2" x 2" welded to handrail posts to protect locations that contact grating.
- 1/16" (or 1/8 ga.) x 2 1/2" x 4" stainless steel shim adhered to top of WF(A-N)4x3.06 beneath each galvanized angle, typ. Adhesives for shims shall be suitable for materials joined and full exposure conditions.
- Galvanized steel L2" x 2" x 1/4", 3 1/2" long with continuous grating 7" long at grating splice.
- Details shown are considered equal alternatives to Aluminum Walkway Details and may be substituted by Contractor at no charge in contract cost.
- Perforated or expanded metal grating providing a skid resistant (non-serrated) surface and capable of supporting a 500 pound concentrated load with a 6'-0" clear span. Walkway and truss grating dimensions are nominal and may vary (width ± 1/2", depth ± 1/2") based on available standard sizes. Cut ends of grating shall be free of burrs or hazardous projections and coated with zinc-rich primer or equivalent.

CANTILEVER SIGN STRUCTURES
ALTERNATE WALKWAY DETAILS

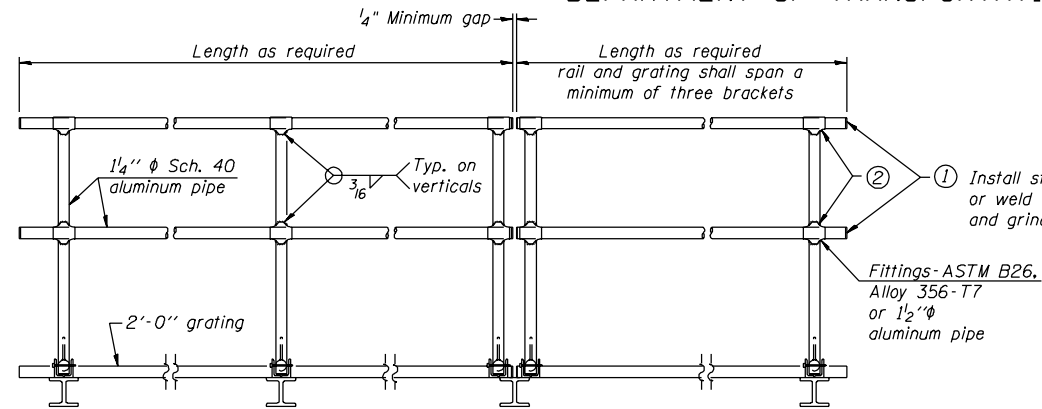
DESIGNED -	200
CHECKED -	EXAMINED
DRAWN -	PASSED
CHECKED -	ENGINEER OF BRIDGES AND STRUCTURES

NUMBER	REVISION	DATE

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
"	"	"		
"	"	"		
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. -

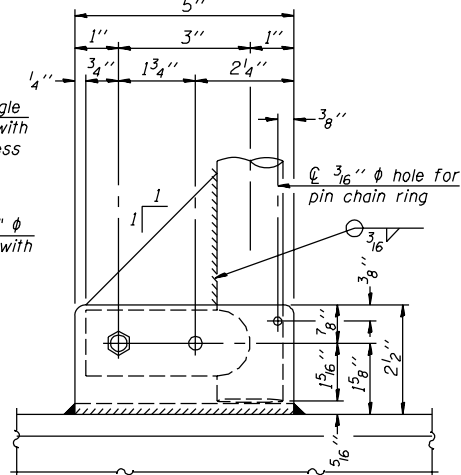
- SHEETS



FRONT ELEVATION

Handrail pipe shall be ASTM B241 or B429, Alloy 6063-T6 or Alloy 6061-T6.

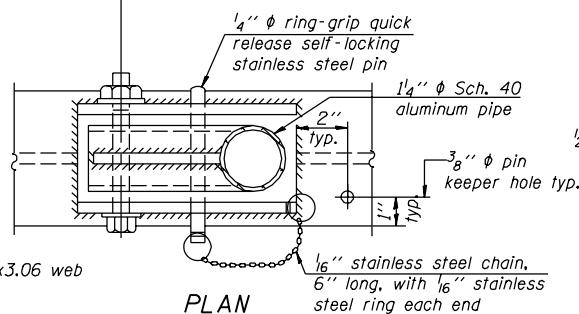
Fittings-ASTM B26,
Alloy 356-T7
or 1½"φ
aluminum pipe



SIDE ELEVATION

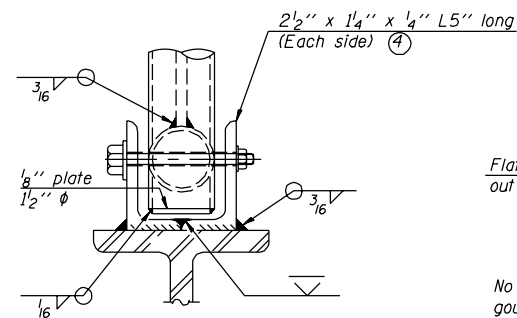
Drill and ream for $\frac{3}{8}$ " ϕ bolt
with two hexagon locknuts and
two stainless steel washers.

Items not shown same as "Side Elevation" of "Handrail Details"



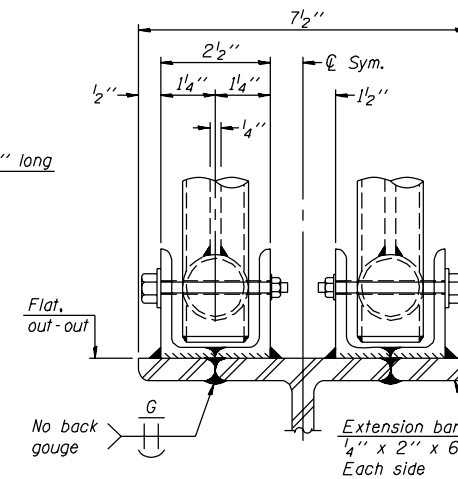
PLAN

DETAIL E HANDRAIL HINGE



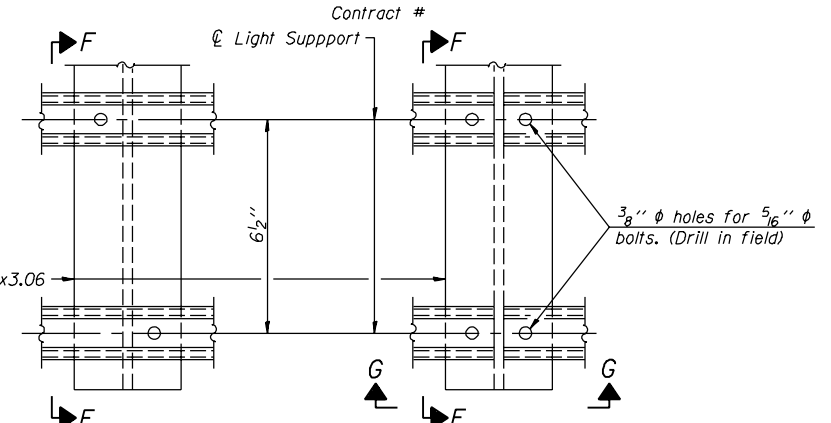
FRONT ELEVATION

Details not shown same as "ELEVATION" at right.

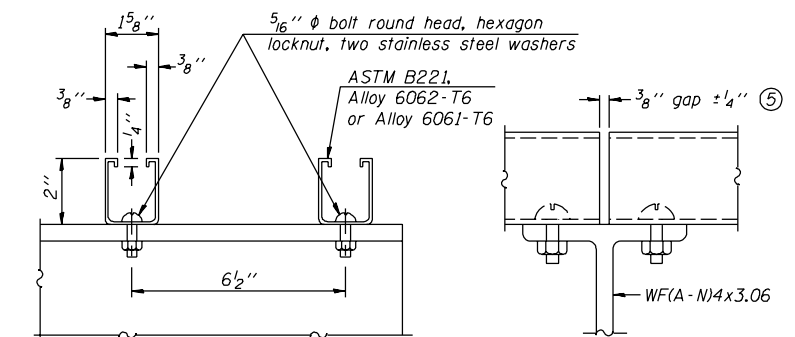


ELEVATION AT HANDRAIL JOINT

Details not shown same as "FRONT ELEVATION"



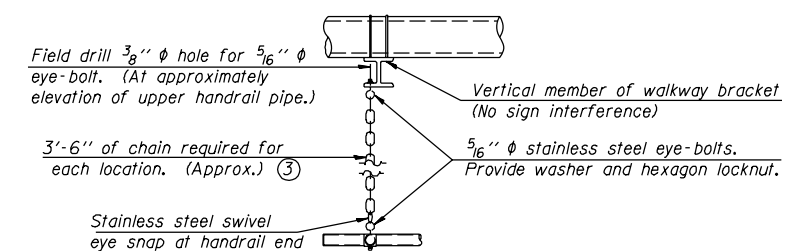
DETAIL G



SECTION G-G

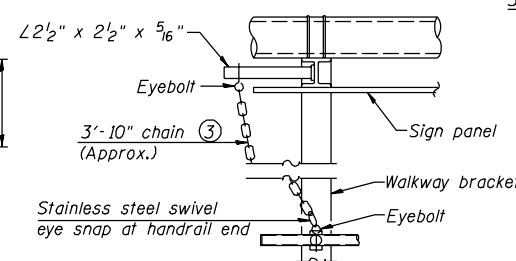
LIGHTING FIXTURE MOUNTS (IF REQUIRED)

⑤ Field cut ends of light support channels shall be free of burrs or hazardous projections and coated with zinc-rich primer or equivalent.



SAFETY CHAIN

One required for each end of each walkway.



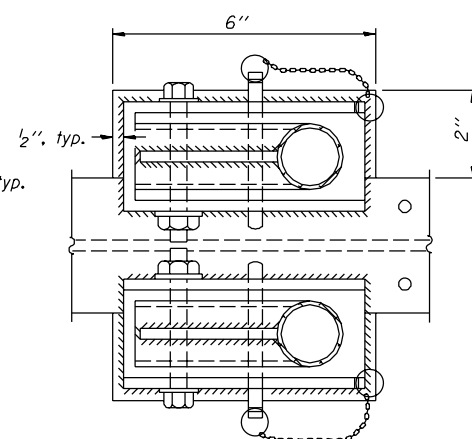
ALTERNATE SAFETY CHAIN ATTACHMENT

Details not shown similar to "Safety Chain" Details
(Walkway omitted for clarity)

③ $\frac{3}{16}$ " Type 304L stainless steel chain, approximately 12 links per foot.

④ Extrusions may be used in lieu of the details shown, with approval of the Engineer.

DESIGNED -	-	200
CHECKED -	EXAMINED	ENGINEER OF BRIDGE DESIGN
DRAWN -	PASSED	ENGINEER OF BRIDGES AND STRUCTURES
CHECKED -		

[illegible]

PLAN AT HANDRAIL JOINT

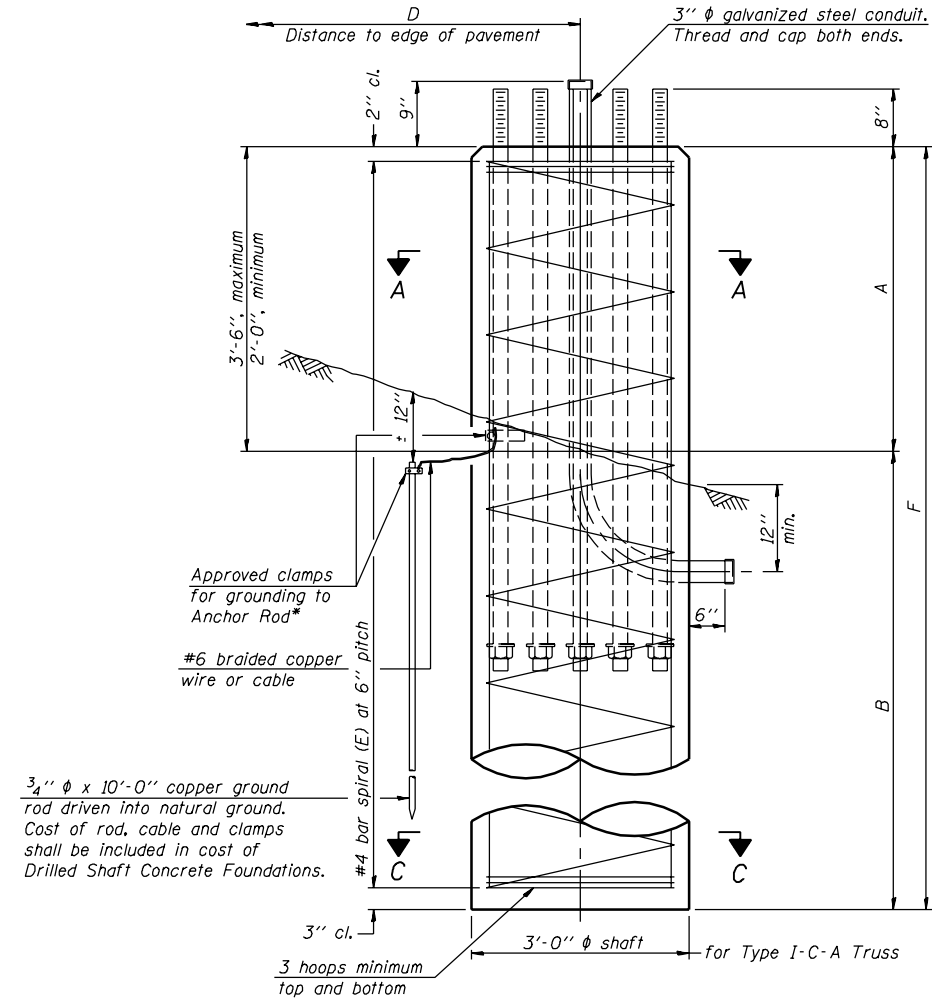
Details not shown same as "PLAN"

* Grind anchor rod to bright finish at ground clamp location before installing clamp.

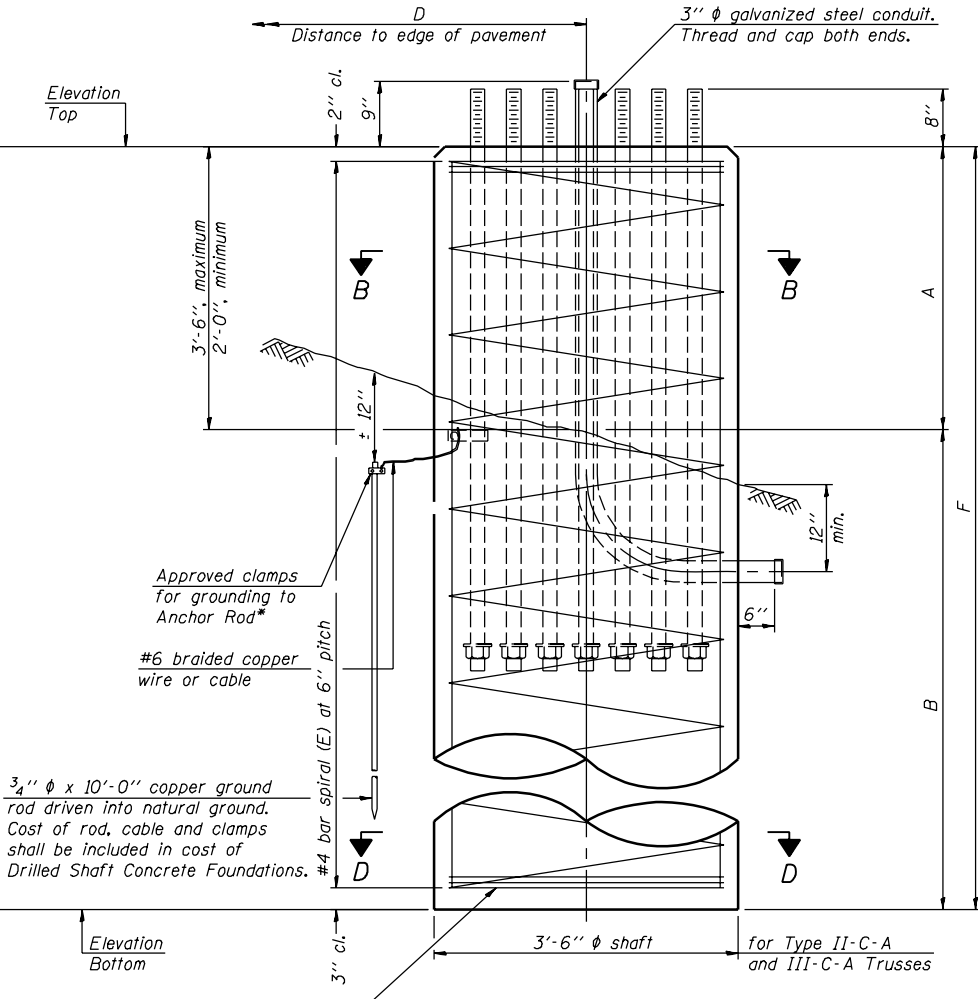
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

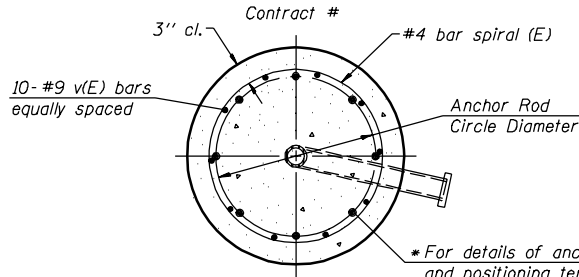
SHEET NO. -
- SHEETS



ELEVATION

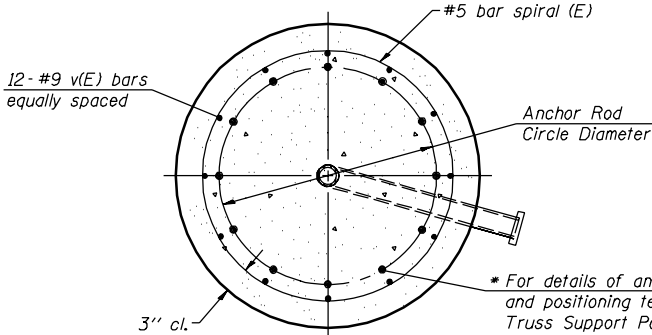


ELEVATION



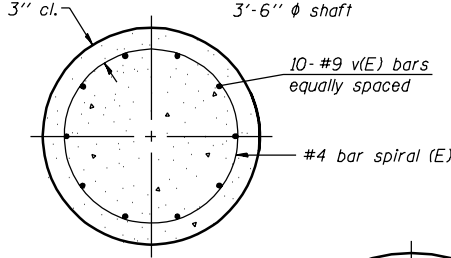
SECTION A-A

3'-0" ϕ shaft



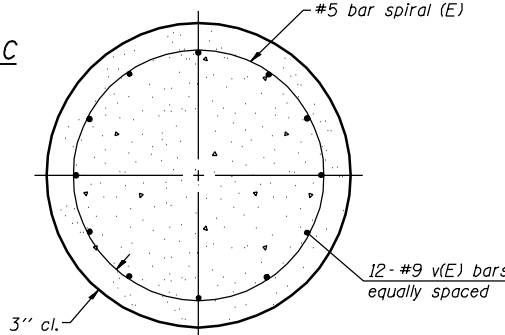
SECTION B-B

3'-6" ϕ shaft



SECTION C-C

3'-0" ϕ shaft



SECTION D-D

3'-6" ϕ shaft

NOTES:
The foundation dimensions shown in the Foundation Design Table are based on the presence of mostly cohesive soils with an average Unconfined Compressive Strength (Q_u) of at least 1.25 tsf, which must be determined by previous soil investigations at the jobsite. When other conditions are indicated, the boring data will be included in the plans and the foundation dimensions shown in the Foundation Data Table will be the result of site specific designs.
If the conditions encountered are different than those indicated, the Contractor shall notify the Engineer to determine if the foundation dimensions need to be modified. If dimensions "B" or "F" are revised by more than 12" by the Contractor, "as-built" plans shall be prepared and submitted to the District Bureau of Operations for future reference.
No sonotubes or decomposable forms shall be used below the lower conduit entrance. Permanent metal forms or other shielding may not be left in place below that elevation without the Engineer's written permission.
Concrete shall be placed monolithically, without construction joints.
Backfill shall be placed per Article 502 of Standard Specification and prior to erection of support column.
A normal surface finish followed by a Bridge Seat Sealer application will be required on concrete surfaces above the lowest elevation 6" below finished ground line. Cost included in "Drilled Shaft Concrete Foundation".

FOUNDATION DATA TABLE										
Structure Number	Station	Truss Type	Shaft Diameter	Elevation Top	Elevation Bottom	Q_u	A	B	F	Class SI Concrete Cubic Yards

FOUNDATION DESIGN TABLE								
Truss Type	Post Base Sheet	Maximum Cantilever Length (ft)	Maximum Total Sign Area (sq ft)	Shaft Diameter (in)	"B" Depth (ft)	Anchor Rods		Anchor Rod Circle Diameter (in)
						No.	Diameter (in)	
I-C-A	OSC-A-4	25	170	3.0	16.0	8	2	22
II-C-A	OSC-A-5	30	170	3.5	17.0	12	2	30
II-C-A	OSC-A-5	30	340	3.5	21.5	12	2	30
III-C-A	OSC-A-5	35	170	3.5	19.0	12	2	30
III-C-A	OSC-A-5	35	250	3.5	22.5	12	2	30
III-C-A	OSC-A-5	35	400	3.5	26.5	12	2	30
III-C-A	OSC-A-5	40	400	3.5	32.0	12	2	30

CANTILEVER SIGN STRUCTURES
DRILLED SHAFT
ALUMINUM TRUSS & STEEL POST

DESIGNED -	200
CHECKED -	EXAMINED
DRAWN -	PASSED
CHECKED -	ENGINEER OF BRIDGES AND STRUCTURES

NUMBER	REVISION	DATE